2015 Gulf of Mexico Oil Spill & Ecosystem Science Conference

February 16-19, 2015

Houston, Texas

THANK YOU

We would like to thank the Executive Committee for its time and direction in planning the Conference.

Charles Wilson (Chair), *Gulf of Mexico Research Initiative*
Michael Carron, *Gulf of Mexico Research Initiative*
Alyssa Dausman, *U.S. Geological Survey*
Allen Dearry, *National Institute of Environmental Health Sciences*
Chris Elfring, *Gulf Research Program of The National Academies*
Peter Koufopoulos, *U.S. Food and Drug Administration*
Paul Sandifer, *National Oceanic and Atmospheric Administration*
David Shaw, *Gulf of Mexico Research Initiative*
Andrew Shepard, *Gulf of Mexico University Research Collaborative*
Suzanne van Drunick, *Environmental Protection Agency*
Denis Wiesenburg, *Gulf of Mexico Research Initiative*

We also thank the staff of the Gulf of Mexico Research Initiative Management Team, which has been working so diligently behind the scenes to ensure everything runs smoothly.

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WELCOME TO THE 2015 Gulf of Mexico Oil Spill & Ecosystem Science Conference

Westin Galleria Hotel, Houston, TX
February 16-19, 2015

The Gulf of Mexico has witnessed significant progress in research and restoration over the past five years. The 2015 Conference is an opportune time to reflect on the current state of the Gulf and recent scientific discoveries and determine where we go next. Located in Houston, the hub of oil and gas activity for the U.S., the conference themes emphasize the impact of the research and application of published research findings, asking "What have we learned, what does it mean and how can it be used?" We look forward to sharing the latest research findings in the fields of oil spill and ecosystem science of the Gulf of Mexico and to discussing research implications, applications and synthesis. We are excited to be joined by approximately 1000 colleagues and peers representing academia, government, non-government and private organizations.

The 2015 conference program has been designed to provide attendees with a broad range of content that highlights current science, management issues and new directions. We are pleased to welcome Dr. Richard Spinrad, Chief Scientist at NOAA, as our keynote speaker. Following his remarks, the program includes an opening plenary summarizing the results of each consortium funded by the Gulf of Mexico Research Initiative, as well as 19 scientific sessions offering approximately 270 oral presentations and 230 poster presentations. Sessions will take place February 17th, 18th and the morning of the 19th. Later on the 19th, we will gather in a Plenary Session for a presentation and discussion of session summaries, emphasizing "Where do we go next?"

We are pleased to have this opportunity to meet in Houston, Texas, home to the oil and energy industry and a city with much history, culture and cuisine for you to explore. We thank the city for hosting us and hope you'll make the most of it during your free time. Finally, we would like to thank our Sponsors, the Executive Committee and the Conference Staff for all of your time and dedication in making this a successful conference.

Again, thank you for your participation. We hope you have a fantastic meeting and look forward to your participation in future events!

THANK YOU TO OUR SPONSORS!

GULF OF MEXICO RESEARCH INITIATIVE

CONSORTIUM FOR Ocean Leadership

GULF RESEARCH PROGRAM
National Academy of Sciences
National Academy of Engineering
Institute of Medicine
National Research Council

Building Partnerships for a Healthier Gulf
GULF OF MEXICO ALLIANCE
Water Quality • Nutrients • Ecosystems • Education • Restoration • Resilience

NOAA
National Oceanic and Atmospheric Administration
U.S. Department of Commerce

GOMURC
GULF OF MEXICO UNIVERSITY RESEARCH COLLABORATIVE

EPA

BOEM
Bureau of Ocean Energy Management

NIEHS
National Institute of Environmental Health Sciences

Sea Grant
Texas • Louisiana • Florida
Mississippi-Alabama

FDA

USGS
science for a changing world

eco
environment coastal & offshore

OCEAN NEWS & TECHNOLOGY
www.oceannews.com

STAY CONNECTED!

In order to keep paper usage at a minimum, the Gulf of Mexico Oil Spill and Ecosystem Science Conference is offering most of its content digitally. All the information you need can be found on the conference webpage: ***http://gulfofmexicoconference.org/***. In addition, there are many other ways to stay connected:

1) Mobile Application

Download the official mobile application for the conference to:

- Get immediate conference updates and schedule changes;
- Browse the conference schedule and abstracts;
- Create your own schedule;
- Use the maps feature to locate your talks and sessions;
- Connect with Social Media and view a live stream of tweets;
- Make notes and comments on scientific sessions you attend;
- Find venue-specific and partner information; and
- Upload pictures.

Scan the QR code or simply search for ***Gulf Science Conference*** in your app store to download the app on your mobile device. You can also visit ***https://events.crowdcompass.com/gulfconference*** for download links and to view the app in your mobile browser.

https://crowd.cc/s/367q

2) Visit our online searchable abstracts database at:

http://bit.ly/1x6Z376

3) Social Networking:

www.facebook.com/gulfscienceconference

#gulfscienceconference

Check out our EPosters!

For the 2015 Gulf of Mexico Oil Spill and Ecosystem Science Conference, all accepted poster presenters were able to create an EPoster for the other attendees to view online before, during and after the conference.

What is an EPoster?

Electronic Posters (or EPosters) are a supplemental electronic version of the formal poster that will be presented during one of the two scheduled Poster Sessions at the 2015 Conference. They can include images, text, and media files including Audio and Video.

How do I view a specific EPoster?

Visit: ***http://bit.ly/1KOjfEb*** to view our EPosters. Just use your conference registration confirmation email and number to access the site. Once uploaded, EPosters can be searched by session, presenter, title, and keyword. Due to the sensitive nature of some EPoster content, EPoster viewing is restricted only to registered conference attendees.

CHECK-IN AND ON-SITE REGISTRATION:

Check-in and on-site Registration will take place in the Galleria Foyer. The Registration Desk will be open at the following times:

Monday, February 16 . . . . 12:00pm-6:00pm
Tuesday, February 17 . . . . 7:30am- 6:00pm
Wednesday, February 18 . . 8:00am-6:00pm
Thursday, February 19 . . . 8:00am-12:00pm

MEALS:

The following meals are provided as part of your registration fees for conference attendees.

Continental Breakfast in the Galleria Foyer:

Tuesday, February 17 . . . . starting at 7:30am
Wednesday, February 18 . . starting at 7:30am
Thursday, February 19 . . . starting at 7:30am

Lunch is not provided, unless you have signed up for a lunch-time workshop which includes lunch. There are many options for lunch throughout the Galleria Mall. The food court is located on the rink level near the ice skating rink. A map of the mall is provided in your conference materials.

Breaks will take place in the Galleria Foyer.

WIFI/INTERNET:

A WIFI connection is provided in the Galleria Foyer free of charge for conference participants. Connection information is available at the registration desk.

EXHIBITS:

Exhibits from Conference Sponsors and Partners are located in the Galleria Foyer for the duration of the conference. We encourage you to stop by during breaks!

INFORMATION FOR ORAL PRESENTERS

- Presentation upload will take place in the San Felipe Room on the third floor.
- You must upload your presentation in the Speaker Ready Room **at least one hour before** your Session is scheduled to begin. We advise that you upload your presentation the day before your session to avoid lines and ensure your presentation is uploaded in time.
- The Speaker Ready Room will be open at the following times:

  Monday, February 16 . . . 12:00pm-5:00pm
  Tuesday, February 17 . . . 8:00am-6:00pm
  Wednesday, February 18 . 8:00am-6:00pm
- Your presentation should be no more than 12 minutes in length (unless you have been designated a 30 minute time slot). This allows for the transition of speakers and keeps the session running on time.
- The conference will provide a laptop with your presentation pre-loaded and a laser pointer.
- Please make sure your presentation is in 2003-2007 Power Point format. This will minimize technological disruptions during the meeting. You will be able to test your presentation ahead of time in the Speaker Ready Room.

INFORMATION FOR POSTER PRESENTERS

- Posters will hang in the Woodway Hall at the Westin Galleria Hotel from Monday afternoon through the duration of the conference. Woodway Hall is on the fourth floor of the hotel.
- Poster Set Up: Monday, February 16 1:00pm-6:00pm
- Poster Tear Down: Posters must be removed by 12:00pm on Thursday, February 19. Any posters not removed by this time will be discarded.
- Poster size should be 48in high x 48in wide.
- We are excited to announce the use of ePosters at the conference – for more information, please see page 3.

MEDIA POLICY

Media representatives are welcome to attend the 2015 Gulf of Mexico Oil Spill & Ecosystem Science Conference. The Media Room is located on the third floor of the hotel in the Westchester Room and will be open during the following hours:

February 17 . . . . . 7:30am – 8:30am; 1pm – 6pm
February 18 . . . . . 8am – 6pm
February 19 . . . . . 8am – 1pm

The conference media policy is designed to ensure a professional forum in which presenters and other meeting registrants can discuss science-based issues freely and in which their concerns about proprietary research data and other information is acknowledged and respected. It is also designed to ensure a forum in which journalists and other media representatives can gather the information they need to deliver factual reporting.

The conference intends to assist media representatives by keeping them updated through press releases, news updates and social media. The conference will also help journalists by arranging interviews with conference speakers and attendees.

In return, the conference would like all media representatives to:

- Wear the designated media badge given to them by conference organizers and identify themselves as a member of the press when attending conference events or talking with any conference participants.
- Obtain permission from Conference Communications and Media Staff before filming, taping or otherwise recording any activity or interview at the conference. Broadcast journalists can record the Plenary Session but audio and video taping of any scientific session is not permitted.
- Any media representative, who sells, markets or represents a company for purposes of obtaining advertising or subscriptions from any registrant will immediately forfeit press credentials.

PHOTO POLICY

Attendees are permitted to take photos during the conference.

Official conference photographs will be taken at the Gulf of Mexico Oil Spill & Ecosystem Science Conference. By registering for this Meeting, you agree to allow the conference to use your photo in any subsequent conference-related publication or website.

AUDIO & VIDEO POLICY

Attendees of the Gulf of Mexico Oil Spill & Ecosystem Science Conference are not permitted to record, film or tape any scientific session.

CELL PHONE POLICY

Out of courtesy to our speakers and attendees, we require that all cell phones be turned off during sessions and meetings.

MEETING FLOOR PLANS

Activities for the 2015 Gulf of Mexico Conference will take place on different floors of the same tower. Rooms will be noted for each session, meeting or event.

Westin Galleria Houston

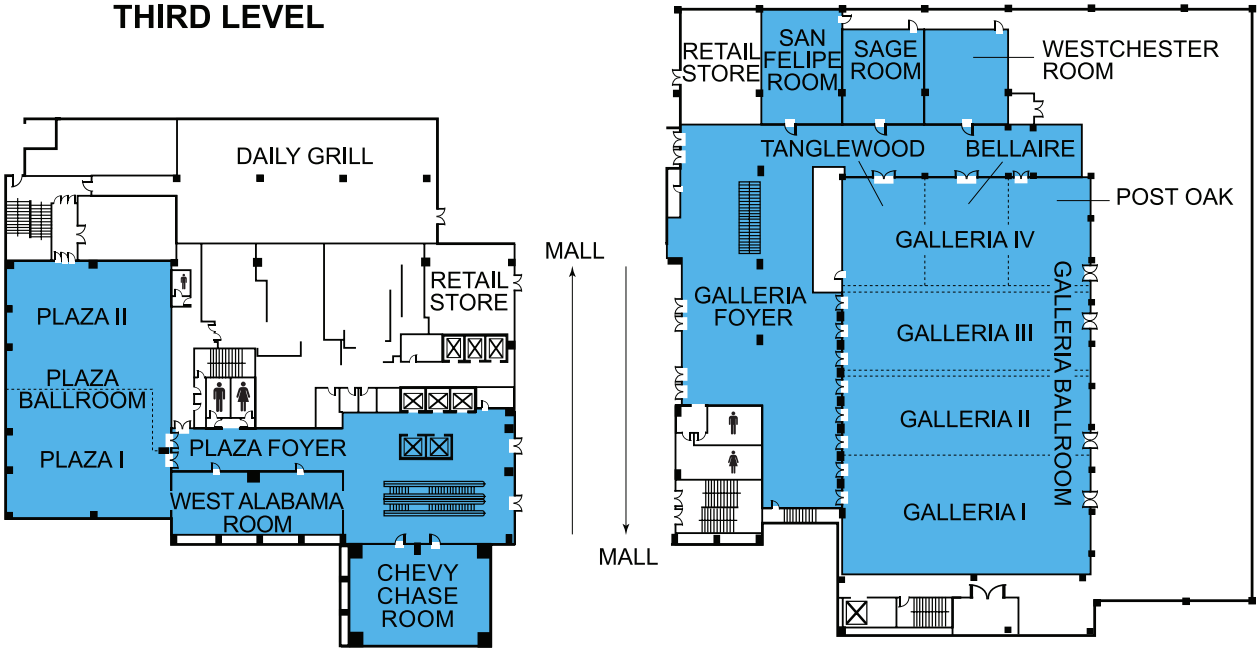
5060 West Alabama, Houston, Texas, 77056

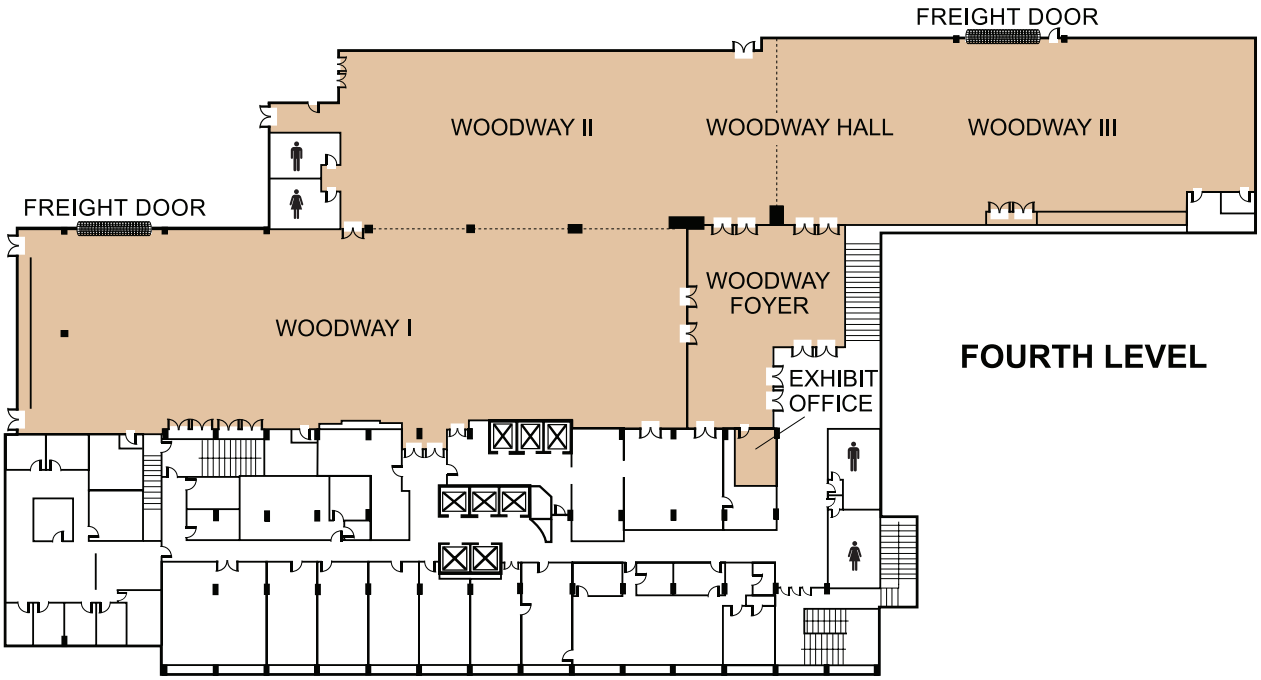
The majority of conference activities will take place on the third floor, including scientific sessions, breakfast, breaks, exhibits and plenary sessions.

The Tuesday and Wednesday night Poster Sessions and Receptions will take place in Woodway Hall on the fourth floor.

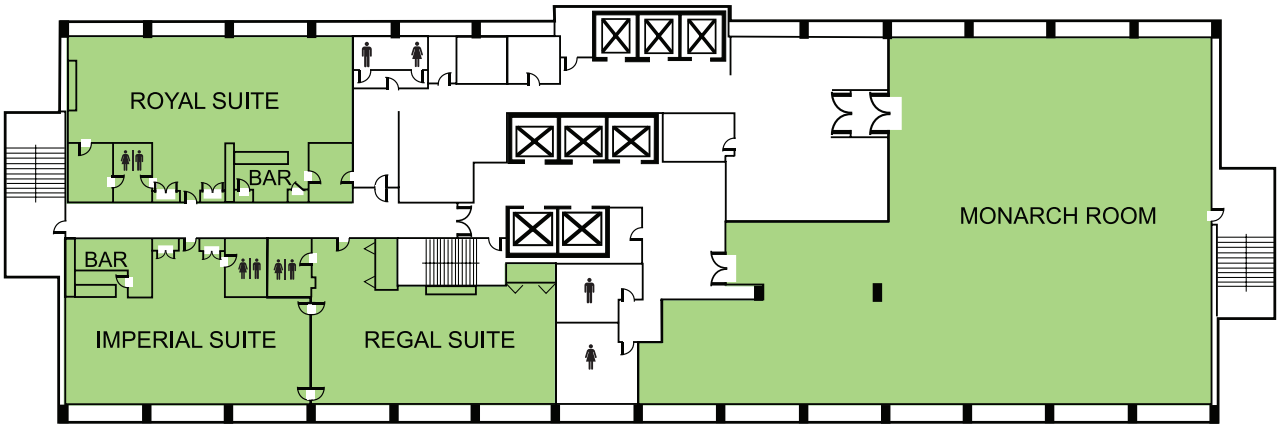
Various associated events will take place on the 24th floor.

THIRD LEVEL





FOURTH LEVEL



TWENTY-FOURTH LEVEL

CONFERENCE AT-A-GLANCE

Time	Monday, February 16	
7:30a		
8:00a		
8:30a		
9:00a		**Associated Events** 9:00am Long-lived Marine Vertebrates
9:30a		
10:00a		
10:30a		
11:00a		
11:30a		
12:00p	On-site registration: Galleria Foyer (Starting at 12:00pm) Presentation Upload: San Felipe Room (Starting at 12:00pm) Poster Set Up: Woodway Hall (Starting at 1:00pm)	12:30pm COMPASS Student Training
12:30p		
1:00p		1:00pm Near Field Modeling Hydrocarbon Analysis Dispersants and Dispersed Oil
1:30p		
2:00p		
2:30p		2:00pm Genomics & Metagenomics
3:00p		
3:30p		
4:00p		
4:30p		
5:00p		3:00pm Environmental Disasters Data Management
5:30p		
6:00p		
6:30p		
7:00p		

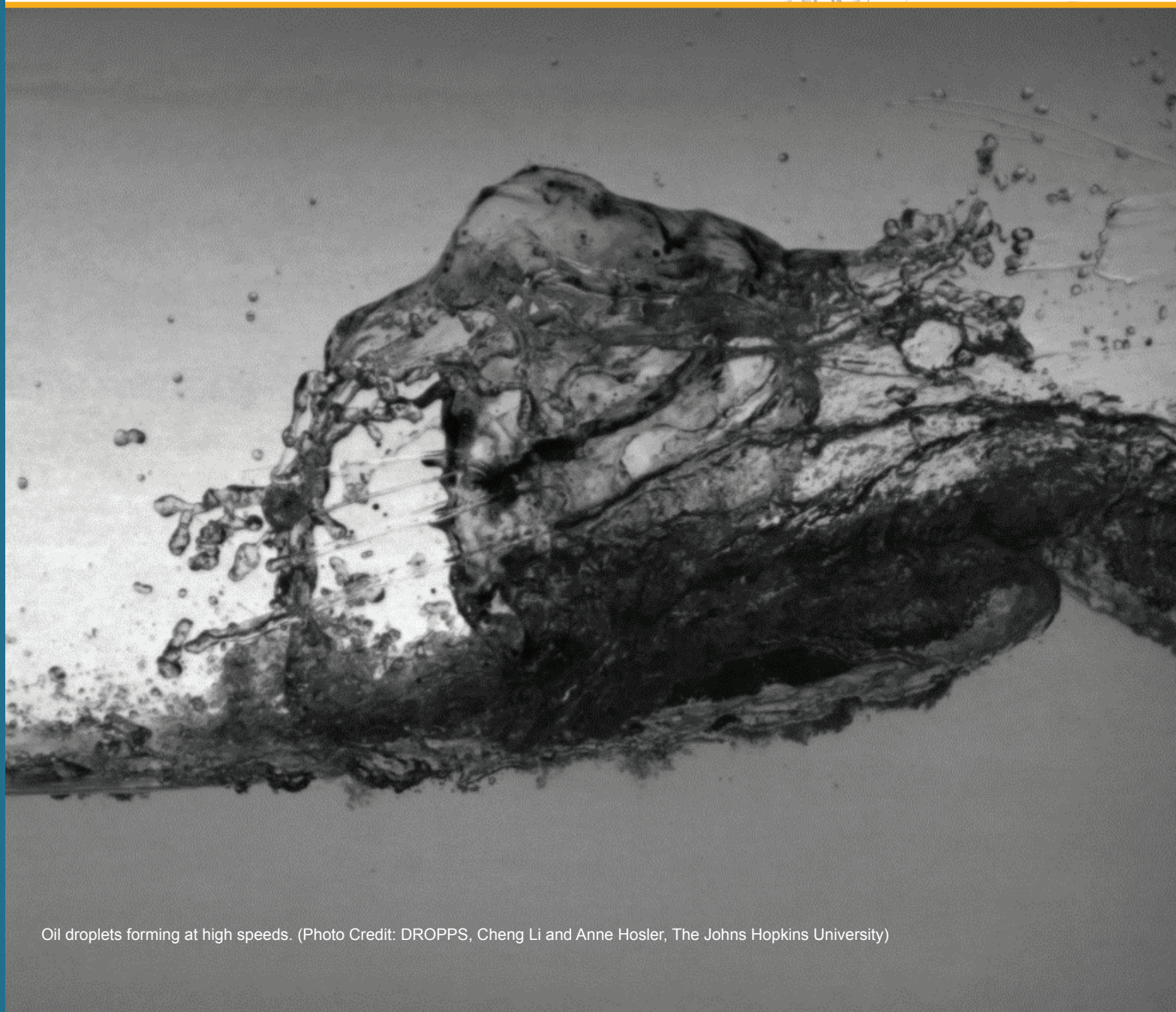
Time	Tuesday, February 17	
7:30a	Onsite Registration and Breakfast at 7:30am	
8:00a	Exhibits Open at 8:00am	
8:30a	Conference Introduction Keynote Speaker Opening Plenary	
9:00a		
9:30a		
10:00a		
10:30a	Break (30 mins)	GRIIDC Session 1
11:00a	Opening Plenary cont.	
11:30a		
12:00p		
12:30p	Lunch (90 mins)	COMPASS Workshop
1:00p		
1:30p		
2:00p	Sessions 001, 002, 003, 004, 005, 006	
2:30p		
3:00p		
3:30p	Break (30 mins)	GRIIDC Session 2
4:00p	Sessions 001, 002, 003, 004, 005, 006	
4:30p		
5:00p		
5:30p	Poster Session & Reception (featuring Sessions 001-009)	
6:00p		
6:30p		
7:00p		

Associated events can be found on page 84

Time	Wednesday, February 18	
7:30a	Breakfast at 7:30am	
8:00a	Onsite Registration & Exhibits Open at 8:00am	
	GRIIDC Session 3	
8:30a	Sessions 005, 006, 007, 008, 009, 010	
9:00a		
9:30a		
10:00a	Break (30 mins)	GRIIDC Session 1
10:30a	Sessions 005, 006, 007, 008, 009, 010	
11:00a		
11:30a		
12:00p	Lunch (90 mins)	COMPASS Workshop
12:30p		
1:00p		
1:30p	Sessions 011, 012, 013, 014, 015, 016	
2:00p		
2:30p		
3:00p	Break (30 mins)	GRIIDC Session 2
3:30p	Sessions 011, 012, 013, 014, 015, 016	
4:00p		
4:30p		
5:00p		
5:30p	Poster Session & Reception (featuring Sessions 010-019)	5:15pm Gulf Programs Panel 7:00pm SPERR
6:00p		
6:30p		
7:00p		

Time	Thursday, February 19	
7:30a	Breakfast at 7:30am	
8:00a	Onsite Registration & Exhibits Open at 8:00am	
8:30a	Sessions 014, 015, 016, 017, 018, 019	
9:00a		
9:30a		
10:00a	Break (30 mins)	GRIIDC Session 3
10:30a	Sessions 014, 015, 016, 017, 018, 019	
11:00a		
11:30a		
12:00p	Lunch (90 mins)	
12:30p		
1:00p		
1:30p	Watkins Student Awards Closing Plenary Conference Wrap Up	
2:00p		
2:30p		
3:00p		
3:30p		
4:00p		
4:30p		
5:00p		
5:30p		
6:00p		
6:30p		
7:00p		

Associated events can be found on page 84



Oil droplets forming at high speeds. (Photo Credit: DROPPS, Cheng Li and Anne Hosler, The Johns Hopkins University)

MONDAY FEBRUARY 16

12:00pm-6:00pm	Registration & Check-in Open	Galleria Foyer
	Exhibit Set Up	Galleria Foyer
1:00pm-5:00pm	Speaker Ready Room Open	San Felipe Room
1:00pm-6:00pm	Poster Hang-Up	Woodway Hall

Associated Meetings & Events

9:00am-6:00pm	Monitoring Status and Trends of Long-Lived Marine Vertebrates as a Measurable Indicator of Restoration and Long-Term Health of the Gulf of Mexico Ecosystem	Galleria IV
12:30pm-5:30pm	COMPASS Student Half-Day Workshop: Communicating Your Science	Galleria I
1:00pm-6:00pm	Near Field Modeling Workshop	Imperial Suite
1:00pm-5:00pm	Hydrocarbon Analysis Experiment: An Important Step in QAQC	Galleria III
1:00pm-2:30pm	State-of-Science on Dispersants and Dispersed Oil	Galleria II
2:00pm-5:00pm	Genomics and Metagenomics: Environmental Applications in Oil Spill Response and Recovery	Regal Suite
3:00pm-4:30pm	Environmental Disasters Data Management	Galleria II

ECOGIG ROV expeditions investigate how the oil and dispersant associated with Deepwater Horizon impacted deep sea coral species. (Photo Credit: ECOGIG, I. MacDonald, FSU)

TUESDAY FEBRUARY 17

7:30am-6:00pm	Registration & Check-in Open	Galleria Foyer
8:00am-6:00pm	Exhibits Open	Galleria Foyer
	Speaker Ready Room Open	San Felipe Room
8:00am-8:00pm	Poster Hall Open	Woodway Hall

Opening Plenary Program Schedule

Starting at 7:30am	BREAKFAST	Galleria Foyer
8:30am-10:15am	Welcome and Introduction *Dr. Rita Colwell, Gulf of Mexico Research Initiative Research Board* Keynote Address *Dr. Richard Spinrad, National Oceanic and Atmospheric Administration* Reports from Consortia funded by Gulf of Mexico Research Initiative	Galleria Ballroom
10:15am-10:40am	BREAK	Galleria Foyer
10:40am-12:30pm	GoMRI Consortia Reports continued	Galleria Ballroom
12:30pm-2:00pm	LUNCH	

Scientific Program Schedule

2:00pm-5:30pm	Session 001	Plaza I
	Session 002	Galleria IV
	Session 003	Galleria III
	Session 004	Plaza II
	Session 005	Galleria II
	Session 006	Galleria I
3:30pm-4:00pm	BREAK	Galleria Foyer
5:30pm-8:00pm	Poster Session (featuring Sessions 001 – 009) & Reception	Woodway Hall

Associated Meetings & Events

10:15am-10:40am	GRIIDC Session 1	West Alabama
12:30pm-2:00pm	COMPASS Lunchtime Workshop: Communicating Your Science	Royal Suite
3:30pm-4:00pm	GRIIDC Session 2	West Alabama

2015 OPENING PLENARY

WHAT HAVE WE LEARNED? WHAT DOES IT MEAN? HOW DO WE USE IT?

Tuesday, February 17 • 8:30am-12:30pm (Galleria Ballroom)

Welcome and Introduction
Rita Colwell, Ph.D., Chair, Gulf of Mexico Research Initiative Research Board

Keynote Address
The 2015 Gulf of Mexico Oil Spill and Ecosystem Science Conference is pleased to welcome Dr. Richard (Rick) Spinrad, Chief Scientist of NOAA, as our distinguished keynote speaker.

Special Plenary Session
The 2015 Gulf of Mexico Oil Spill and Ecosystem Science Conference welcomes the leaders of Gulf of Mexico Research Initiative RFP-I consortia. Consortia Directors will provide Conference attendees with a summary of their respective findings over the past three years. In line with Conference objectives they will share: What have we learned? What does it mean? And where should we go next?

Richard Spinrad, Ph.D.

Dr. Richard W. (Rick) Spinrad was appointed by President Obama as Chief Scientist of the U.S. National Oceanic and Atmospheric Administration (NOAA) in May 2014. An internationally recognized scientist and executive with more than 35 years of experience in government, the private sector, academia and a non-governmental organization, Spinrad has extensive understanding of environmental research, management and teaching. He served previously as vice president for research at Oregon State University, and was the head of NOAA's Office of Oceanic and Atmospheric Research and the National Ocean Service where he was a leader in the development of the nation's first-ever ocean research priorities strategy. As Technical Director to the Oceanographer of the U.S. Navy and Division Director at the U.S. Office of Naval Research he established priorities for the U.S. Navy investment in application of oceanographic and meteorological products to fleet operations. Dr. Spinrad was President of Sea Tech, Inc. and he served as executive director for research and education at the Consortium for Oceanographic Research and Education, Inc. (CORE, now the Consortium for Ocean Leadership). Spinrad has published extensively in pre-eminent peer-reviewed journals and was on the faculty at the U.S. Naval Academy, George Mason University and Oregon State University. He has been awarded highest honors from three international professional societies, and has been recognized with the highest awards from the U.S. Government including two Presidential Rank Awards (from Presidents George W. Bush and Barack Obama), and the Distinguished Civilian Service Award from the U.S. Navy. Dr. Spinrad served as President of the Oceanography Society, and was elected President of the Marine Technology Society. He received a Chartered Marine Scientist certificate from the Institute of Marine Engineering Science and Technology in London, England. His B.A. in earth and planetary sciences is from The Johns Hopkins University and his M.S. and Ph.D., both in oceanography, are from Oregon State University.

Rita Colwell, Ph.D.

Rita Colwell, Ph.D., is the Research Board Chair of the Gulf of Mexico Research Initiative. Dr. Colwell is Distinguished University Professor at the University of Maryland at College Park and Johns Hopkins University, Senior Advisor and Chairman Emeritus of Canon US Life Sciences, Inc., and Founder and Chairman of CosmosID, Inc. Dr. Colwell has held many advisory positions in the US government and nonprofit and private sectors, including serving as the 11th Director of the National Science Foundation. Her interests are focused on global infectious diseases, water, and health. During her internationally recognized career, Dr. Colwell has been awarded 58 honorary degrees from institutions of higher education, and she has authored or co-authored 17 books and more than 750 scientific publications. Dr. Colwell holds a Ph.D, in oceanography from the University of Washington.

Tamay M. Özgökmen, Ph.D.

Tamay M. Özgökmen, Ph.D., is Director of GoMRI's Consortium for Advanced Research on Transport of Hydrocarbon in the Environment (CARTHE). Dr. Özgökmen is also Professor in the Rosenstiel School of Marine and Atmospheric Science at the University of Miami. His research interests focus on the investigation of multi-scale oceanic flows using non-hydrostatic numerical models and Lagrangian methods. Dr. Özgökmen holds a Ph.D. in engineering sciences from Dartmouth College.

Steve Murawski, Ph.D.

Steve Murawski, Ph.D., is Director of GoMRI's Center for Integrated Modeling and Analysis of Gulf Ecosystems (C-IMAGE). Dr. Murawski is also Professor and the St. Petersburg Partnership – Peter Betzer Endowed Chair of Biological Oceanography at the University of South Florida. His research interests focus on population dynamics of exploited marine species, impacts of fishing and other anthropogenic stresses on marine ecosystems and ecosystem modeling and analysis. Dr. Murawski holds a Ph.D. in fisheries and wildlife biology from the University of Massachusetts at Amherst.

Vijay John, Ph.D.

Vijay John, Ph.D., is Director of GoMRI's Consortium for Molecular Engineering of Dispersant Systems (C-MEDS). Dr. John is also Leo S. Weil Professor of Engineering in the Department of Chemical and Biomolecular Engineering at Tulane University. His research interests focus on self-assembly and nanostructured materials, polymer/nanoparticle composites, biomolecular materials, microemulsion systems and clathrate hydrate thermodynamics. Dr. John holds a D.Eng.Sci. in chemical engineering and applied chemistry from Columbia University.

Nancy Rabalais, Ph.D.

Nancy Rabalais, Ph.D., is Director of GoMRI's Coastal Waters Consortium (CWC). Dr. Rabalais is also Executive Director and Professor at Louisiana Universities Marine Consortium. Her research interests focus on coastal change, eutrophication and hypoxia, cumulative coastal stressors, historical reconstruction of ecosystem changes from sediments, pelagic and benthic processes in continental shelf hypoxic areas and the coastal ecosystem impact of the Deepwater Horizon oil spill. Dr. Rabalais holds a Ph.D. in zoology from the University of Texas, Austin.

Eric Chassignet, Ph.D.

Eric Chassignet, Ph.D., is Director of GoMRI's Deep Sea to Coast Connectivity in the Eastern Gulf of Mexico Consortium (DEEP-C). Dr. Chassignet is also Professor at Florida State University and Director of the Center for Ocean-Atmospheric Prediction Studies. His research interests focus on the role of the ocean in climate variability and on the development of earth system prediction capabilities in the Gulf of Mexico that improve our ability to forecast the fate and pathways of released oil. Dr. Chassignet holds a Ph.D. in physical oceanography from the University of Miami.

Edward Buskey, Ph.D.

Edward Buskey, Ph.D., is Director of GoMRI's Dispersion Research on Oil: Physics and Plankton Studies Consortium (DROPPS). Dr. Buskey is also Professor of marine science and Associate Chair of the Department of Marine Science at the University of Texas at Austin, as well as Research Director for the Mission-Aransas National Estuarine Research Reserve. His research interests focus on biological oceanography, estuarine processes, and plankton ecology. Dr. Buskey holds a Ph.D. in biological oceanography from the University of Rhode Island.

Geoff Wheat, Ph.D.

Geoff Wheat, Ph.D., is Director of GoMRI's Ecosystem Impacts of Oil & Gas Inputs to the Gulf Consortium (ECOGIG). Dr. Wheat is also Professor of geology and geological engineering at the University of Mississippi and Director of the National Institute for Undersea Science and Technology. His research interests focus on the design, development and use of innovative new technologies to understand the ocean environment, especially the extreme environment of the deep ocean. Dr. Wheat holds a Ph.D. in oceanography from the University of Washington.

Piers Chapman, Ph.D.

Piers Chapman, Ph.D., is Director of GoMRI's Gulf of Mexico Integrated Spill Response Consortium (GISR). Dr. Chapman is also Professor in the Department of Oceanography at Texas A&M University. His research interests focus on nutrient cycling in coastal areas, the marine iodine cycle, the physics and chemistry of upwelling areas, low oxygen regimes in the ocean and marine pollution, specifically oil production control methods and dispersant usage. Dr. Chapman holds a Ph.D. in marine chemistry from the University of Wales (Bangor).

Session 001

DATA MANAGEMENT AND INFORMATICS SUPPORTING ECOSYSTEM SCIENCES

Tuesday, February 17, 2:00p – 5:30p, Plaza I

Matthew Howard, Texas A&M University*
Amy Merten, National Oceanic and Atmospheric Administration
Dave Reed, Florida Fish and Wildlife Conservation Commission

The Gulf of Mexico Research Initiative (GoMRI) is approaching the midpoint of its ten year investigation on the impacts of oil and dispersants on Gulf ecosystems. To date, a large amount of data has been produced by GoMRI-funded researchers and submitted to the GoMRI Information and Data Cooperative (GRIIDC). A similar amount of data is expected to be submitted in the remaining time. In addition, significant amounts of related data are expected to come from ongoing Deepwater Horizon (DWH) assessment and restoration activities, the 30-year National Academies Gulf Research Program, the RESTORE Act, and other programs. At this time of “abundant,” if not “big” data, the session’s organizers feel this is an opportune time for Gulf data managers to come together to share lessons learned and to conjecture on what may lie ahead.

**Session Organizer*

Time	Title	Presenter
2:00p-2:15p	Session Introduction	
2:15p-2:30p	Pulling together growing data to fuel ecosystem models: An introduction to rglobi and ratlantis	J. Stephen Gosnell, Baruch College, City University of New York
2:30p-2:45p	Gulf Of Mexico Species Interactions (GoMexSI): Building A Baseline Database of Gulf-wide Species Interaction Networks For Perturbation Response Models	James Simons, Center for Coastal Studies, Texas A&M University - Corpus Christi
2:45p-3:00p	Cryptographic Hashing of Research Data Files to Ensure Data Integrity	James Davis, Texas A&M University - Corpus Christi
3:00p-3:15p	Enabling Near-Real-Time Mitigation with Web Services for Sharing Buoy Data: Potential Applications for Marine Mammal Monitoring in the Gulf of Mexico	Matthew Robbins, Cornell University
3:15p-3:30p	U.S. IOOS Data Management Services to address biological and ecosystem data integration to support Ecosystem Sciences in the Gulf of Mexico	Matthew Howard, Gulf of Mexico Ocean Observing System Regional Associations (GCOOS-RA)
3:30p-4:00p	Coffee Break	
4:00p-4:15p	Metadata Lessons Learned for Highly Varied Data Collections	William Nichols, Harte Research Institute for Gulf of Mexico Studies
4:15p-4:30p	Going Beyond the Publication: NETL's Energy Data Exchange (EDX)-a coordination and collaboration platform to help make science more accessible	Jennifer Bauer, National Energy Technology Laboratory
4:30p-4:45p	Open Standards-based Data and Information Sharing to Enhance Environmental Science	Lawrence Langebrake, SRI International
4:45p-5:00p	Managing and Accessing Natural Resource Damage Assessment Data From The Deepwater Horizon Oil Spill	Ben Shorr, National Oceanic and Atmospheric Administration
5:00p-5:15p	Advancing a data sharing culture	James Gibeaut, Harte Research Institute
5:15p-5:30p	Preparing Data Management Systems For The Next Environmental Disaster	Amy Merten, National Oceanic and Atmospheric Administration

Session 002

OIL-DISPERSANTS-SEDIMENT INTERACTIONS AND WEATHERING/ DEGRADATION OF SPILLED OIL IN GULF OF MEXICO ECOSYSTEMS

Tuesday, February 17, 2:00p – 5:30p, Galleria IV

Dongye (Don) Zhao, Auburn University*
S. Erin O'Reilly, Bureau of Ocean Energy Management, Gulf of Mexico Region
Joseph Pignatello, Connecticut Agricultural Experiment Station and Yale University
Uta Passow, University of California, Santa Barbara**
Kalliat Valsaraj, Louisiana State University**
Christopher Reddy, Woods Hole Oceanographic Institution**

The interactions of oil and chemically-dispersed oil with sediments and suspended particles in coastal, open-ocean, and deep-water ecosystems affect key physical, chemical and biological processes that control the environmental fate and transport of spilled oil. This session is designed to share the latest research findings on oil-dispersant-sediment interactions chemical and biological weathering of oil, effects of dispersants on oil degradation and remediation practices, and effects of oil dispersants on the environmental fate and transport of spilled oil. The session will serve as a platform for researchers and practitioners to dialog on the latest research implications and applications and to identify future research needs. This session will focus on the following three interconnected topics:

1. Oil-dispersant-sediment interactions and their effects on marine snow formations and on the environmental distribution and transport of spilled oil.
2. Weathering/degradation of oil and effects of oil dispersants.
3. Effects of dispersants on engineered remediation practices.

**Session Organizer*

***Invited Speaker*

Time	Title	Presenter
2:00p-2:15p	Session Introduction	
2:15p-2:45p	Formation And Sedimentation Of Oil-Associated Marine Snow Re-concentrates Oil-Spill Pollutants	Uta Passow, Marine Science Institute, University of California Santa Barbara
2:45p-3:00p	Effects of Oil Dispersants on Formation of Marine Oil Snow and Related Transport of Oil Hydrocarbons	Dongye Zhao, Auburn University
3:00p-3:15p	Laboratory Tests Of Biochars As Absorbents For Use In Recovery Or Containment Of Marine Crude Oil Spills	Joseph Pignatello, The Connecticut Agricultural Experiment Station
3:15p-3:30p	Atmospheric Transport of Oil and Dispersants from the Air-Water Interface	Kalliat Valsaraj, Louisiana State University
3:30p-4:00p	Coffee Break	
4:00p-4:30p	The oxidation of Macondo well oil: An update and vision	Christopher Reddy, Woods Hole Oceanographic Institute
4:30p-4:45p	Photochemical Changes in Water Accommodated Fractions of MC252 and Surrogate Oil Created During Solar Exposure as determined by FT-ICRMS	Pamela Vaughan, Chemistry, University of West Florida
4:45p-5:00p	Solar Production of Singlet Oxygen and Hydroxyl Radical From Thin Oil Films in the Presence of Dispersant	Olivia McKinzie, University of New Orleans
5:00p-5:15p	Photochemical Transformations Of Petroleum On Seawater	Phoebe Ray, University of New Orleans
5:15p-5:30p	Compositional Comparison of Weathering Trends for Four Different Spills Reveal the Unique Chemical Signature of Deepwater Horizon Oil Contamination	Logan Krajewski, Department of Chemistry and Biochemistry, Florida State University

Session 003

MICROBIAL ECOSYSTEM TRAJECTORIES IN GULF OF MEXICO ENVIRONMENTS

Tuesday, February 17, 2:00p – 5:30p, Galleria III

Andreas Teske, University of North Carolina at Chapel Hill*
Joel Kostka, Georgia Institute of Technology

Microbial ecosystems in the northern Gulf of Mexico range from highly productive and seasonally dynamic estuaries, river plumes and nearshore waters to the seafloor, seeps and subsurface sediments of the deep continental slope. These ecosystems react, drastically or subtly, to disturbance over varying time scales and in the context of different environmental parameters. While numerous post-DWH studies have provided taxonomic and metagenomic snapshots and time series surveys of microbial communities and their activities in a wide range of habitats, they have implications for ecosystem function and ecosystem services as well. This session will be coordinated with Session 007 “Making a living on hydrocarbons” and its hydrocarbon-centered microbial theme, to include a broadly defined range of post-DWH microbial ecosystem disturbance events and trajectories across diverse Gulf of Mexico environments.

**Session Organizer*

Time	Title	Presenter
2:00p-2:15p	Session Introduction	
2:15p-2:30p	Temporal and Spatial Patterns on The Northwest Florida Shelf: Implications for microbial response to oil spills	Wade Jeffrey, University of West Florida
2:30p-2:45p	Cable Bacteria: “invisible” sulfide oxidizing mats at cold seeps?	Sairah Malkin, University of Georgia
2:45p-3:00p	The Deep-Sea Water-Sediment Interface: Eukaryotic Microbial Communities From the North East Gulf of Mexico	Richard Snyder, University of West Florida
3:00p-3:15p	Short-chain alkane production in Gulf of Mexico cold seep sediments	Ryan Sibert, University of Georgia
3:15p-3:30p	Microbial enzymatic activity and secondary production in sediments affected by the sedimentation pulse following the Deepwater Horizon oil spill	Kai Ziervogel, University of North Carolina at Chapel Hill
3:30p-4:00p	Coffee Break	
4:00p-4:15p	Biogeography Of Phytoplankton Community Structure In The Northern Gulf Of Mexico	Ajit Subramaniam, Lamont Doherty Earth Observatory
4:15p-4:30p	Elucidating the diversity of benthic microbial communities and foraminifera at the seafloor in the northern Gulf of Mexico	Will Overholt, Georgia Institute of Technology
4:30p-4:45p	Geographical and Geological Distribution of Benthic Bacterial Communities in the Gulf of Mexico after 2010 Deepwater Horizon Oil Spill	Joong-Wook Park, Troy University
4:45p-5:00p	Response of deep-sea sediment bacterial communities in the Gulf of Mexico to Light Louisiana Sweet crude oil	Hernando Bacosa, The University of Texas at Austin Marine Science Institute
5:00p-5:15p	Deep Sea Coral-Associated Bacterial Community Composition Analysis Using 16S rDNA	Richard Dannenberg, Pennsylvania State University
5:15p-5:30p	Temporal changes of oil-degrading bacteria in Louisiana salt marsh sediments after the Deepwater Horizon oil spill	Corwin Hess, Louisiana State University

Session 004

APPLICATIONS OF RESEARCH IN OIL SPILL FATE AND TRANSPORT MODELING FOR DECISION SUPPORT

Tuesday, February 17, 2:00p – 5:30p, Plaza II

Christopher Barker, National Oceanic and Atmospheric Administration*
CJ Beegle-Krause, SINTEF Materials and Chemistry
Louis Thibodeaux, Louisiana State University

Oil spill fate and transport models are integrated computer systems that simulate the transport, fate and effects of oil and chemical spills. Such models are critical to Decision Support during the response to oil spills, informing planning activities, evaluating trade-offs of response actions, assessing the damage from spills, and better understanding the impacts that past and future spills have on the environment. In recent years, much basic research has been done to better understand many of the processes that transport and effect oil spilled in the marine environment, but better understanding of a specific process does not directly translate to better planning for a spill or better response. This session focuses on research aspects that lead us to a next generation of scientifically based fate and transport models designed for Decision Support.

**Session Organizer*

Time	Title	Presenter
2:00p-2:15p	Session Introduction	
2:15p-2:30p	Lagrangian trajectories computed using the ROMS model in GoM during the BP oil spill: verification and sensitivity quantification using the Bred Vector Technique	Vikram Khade, Texas A&M University
2:30p-2:45p	A complete mass balance for the Macondo blowout: the first 20 days	Mark Reed, SINTEF Materials & Chemistry
2:45p-3:00p	Near field LES simulation of bubble plumes in oil blow-outs: statistical analysis and cross flow influence	Bruño Fraga, Cardiff University
3:00p-3:15p	A new approach for studying oil dispersion over large domain sizes using large-eddy simulation	Bicheng Chen, Pennsylvania State University
3:15p-3:30p	Development of a New Oil Droplet Biodegradation Algorithm for NOAA's Oil Spill Modeling Suite (GNOME/ADIOS)	Dalina Thrift-Viveros, National Oceanic and Atmospheric Administration
3:30p-4:00p	Coffee Break	
4:00p-4:15p	Improve Oil Spill Risk Analysis in Gulf of Mexico at Bureau of Ocean Energy Management Using a Multiple Hydrodynamic Model Approach	Zhen Li, Bureau of Ocean Energy Management
4:15p-4:30p	Uncertainty propagation in an oil plume model	Shitao Wang, Rosenstiel School of Marine and Atmospheric Science, University of Miami
4:30p-4:45p	Quantifying Uncertainty In The Deep-C Oil-Fate Model Using Polynomial Chaos	Rafael Gonçalves, Rosenstiel School of Marine and Atmospheric Science, University of Miami
4:45p-5:00p	Predicting Oil Transport Clustering, the Evolution of Surface Material Density	Gregg Jacobs, Naval Research Lab
5:00p-5:15p	Uncertainty modeling and reliability assessment for operational oil spill forecast	Xianlong Hou, The University of Texas at Austin
5:15p-5:30p	A Vision of Science for Next Generation Response	CJ Beegle-Krause, SINTEF Materials and Chemistry

Session 005

GAPS TO GAINS: TRANSDISCIPLINARY APPROACHES IN EXAMINING ENVIRONMENTAL, HEALTH, AND ECOSYSTEM SERVICES RISK AND RESILIENCE IN GULF COAST COMMUNITIES

Tuesday, February 17, 2:00p – 5:30p, Galleria II

Maureen Lichtveld, Tulane University School of Public Health and Tropical Medicine*
Claudia Thompson, National Institute of Environmental Health Sciences
David Yoskowitz, Texas A&M University-Corpus Christi
Ashley Ross, Sam Houston State University
Linda Birnbaum, National Institute of Environmental Health Sciences**

The session addresses two conference themes: public health and socio-economics; and education, outreach, and communication. Presentations will focus on risk reduction and resilience strategies associated with the reciprocal impact of people and ecosystems. Three modules answer the key questions:

“What have we learned” features key research findings to date demonstrating the interconnectedness between public- and ecosystem services health;

“What does it mean” includes presentations elucidating the relevance of the research findings to date to our Gulf Coast communities; and

“How can it be used” focuses on research translation and demonstrates the role of evidence-based practical tools in strengthening community health and wellbeing.

From design to dissemination, this session highlights illustrative examples of community-academic partnerships and transdisciplinary team science applicable beyond disaster-related research.

**Session Organizer*

***Keynote Speaker*

Time	Title	Presenter
2:00p-2:15p	Session Introduction	
2:15p-2:45p	Responses to the Gulf Oil Spill: Health Research, Community-Academic Partnerships, Lessons Learned, and Preparedness for Future Disasters	Linda Birnbaum, National Institute of Environmental Health Sciences
2:45p-3:00p	Experience of the Deepwater Horizon oil spill and mental health in pregnant and reproductive-aged women	Emily Harville, Tulane University
3:00p-3:15p	Quality of life as a measure of resilience in first-time Gulf Coast pregnant women	Arti Shankar, Tulane University School of Public Health and Tropical Medicine
3:15p-3:30p	An Analysis Of The Impacts Of The Deepwater Horizon On The Seafood Industry	Michael Carroll, The Vertex Companies, Inc.
3:30p-4:00p	Coffee Break	
4:00p-4:15p	Respiratory Symptoms in Oil Spill Clean-up Workers Participating in the GuLF STUDY	Dale Sandler, National Institute of Environmental Health Sciences/National Institutes of Health
4:15p-4:30p	Communicating Current Biomonitoring Results to Gulf Coast Residents	Christine Ekenga, National Institute of Environmental Health Sciences
4:30p-4:45p	Lung Function in Oil Spill Clean-up Workers and Non-Workers in the GuLF STUDY Cohort	Kaitlyn Gam, Tulane University School of Public Health and Tropical Medicine
4:45p-5:00p	Chemical and non-chemical stressors linked with the Gulf of Mexico oil spill and the impact on telomere length, a biological marker of stress and health, in infants and young children	Stacy Drury, Tulane University School of Medicine
5:00p-5:15p	Using Secondary Data to Quantify the Health Impacts of Disasters in the Gulf	Jennifer Horney, Texas A&M University
5:15p-5:30p	Community-Based Participatory Research In Southeast Louisiana: Challenges In Determining Air and Food-Borne Exposures In Low-Income Participants	Jessi Howard, Tulane University

Session 006

EMERGING ECOLOGICAL IMPACTS OF THE DEEPWATER HORIZON OIL SPILL: EVALUATING ECOSYSTEM CHANGE AND RESILIENCY

Tuesday, February 17, 2:00p – 5:30p, Galleria I

Steven Murawski, University of South Florida*
Kendra Daly, University of South Florida
Jeff Chanton, Florida State University
William Patterson III, Dauphin Island Sea Lab**

The Deepwater Horizon (DWH) oil spill resulted in thousands of tons of oil entering diverse ecotypes of the Gulf of Mexico. These included the abyssal-benthic, the bathypelagic, continental shelf, near-coastal, and estuarine/salt marsh ecosystems. During the intervening five years, considerable information has been derived documenting the production, species composition and distribution of ecological communities in all of these environments. In some cases, clear trends in population and community dynamics have emerged. In other cases, data show no discernible changes that can be linked with the DWH event. The lack of pre-impact data in some cases have resulted in ecologists either inferring impacts from post-event changes, or essentially substituting “space for time” in comparing ecosystems within the impact zone to pseudo-control areas elsewhere. This session will bring together field ecologists, laboratory researchers and modelers to share information on the interpretation of ecological data sets related to the DWH incident. In particular, the session will focus on understanding ecosystem resiliency (ability of the ecosystem to return following perturbation) in the context of multiple simultaneous stressors.

**Session Organizer*

***Keynote Speaker*

Time	Title	Presenter
2:00p-2:30p	Reef fishes and the Deepwater Horizon Oil Spill: chronic effects and evidence of system resiliency	William Patterson III, University of South Alabama
2:30p-2:45p	Resilience in the Northern Gulf of Mexico Offshore Plankton Community	Kendra Daly, University of South Florida
2:45p-3:00p	Condition, Diet, and Growth of Larval Spanish Mackerel (*Scomberomorus maculatus*) in relation to the Deepwater Horizon oil spill	John Ransom, The University of Southern Mississippi
3:00p-3:15p	What Have We Learned About the Oceanic Fish Fauna of the Gulf of Mexico? Initial Results of the NOAA Offshore Nekton Sampling and Analysis Program	Tracey Sutton, Nova Southeastern University Oceanographic Center
3:15p-3:30p	The forgotten habitat, modeling pelagic species and ecosystem response to DWH in the offshore waters of the Gulf of Mexico	John Lamkin, National Oceanic and Atmospheric Administration Fisheries
3:30p-4:00p	Coffee Break	
4:00p-4:15p	Larval fish assemblages associated with mesoscale structures of the deepwater region of Mexico's EEZ: a post-oil spill baseline study	Sharon Herzka, Center for Scientific Research and Higher Education of Ensenada (CICESE)
4:15p- 4:30p	Vulnerability of Fish Larvae Populations to an Oil Well Blow Out in the Gulf of Mexico	Emily Chancellor, University of South Florida
4:30p-4:45p	Taxon-specific variability in condition among larval fishes collected before, during, and after the Deepwater Horizon oil spill	Frank Hernandez, University of Southern Mississippi
4:45p-5:00p	The Interaction Between Benthic Bioturbators And Microbes On The Fate Of Hydrocarbons In Sediment - 1) Sediment Characteristics And PAH Levels	Alex Kascak, University of Louisiana at Lafayette
5:00p-5:15p	The Interaction Between Benthic Bioturbators And Microbes On The Fate Of Hydrocarbons In Sediment - 2) Microbial Composition And PAH Degradation	Nihar Deb Adhikary, University of Louisiana at Lafayette
5:15p-5:30p	Megainvertebrate Communities Resiliency to Ixtoc-1 oil well blowout	Adolfo Gracia, Instituto de Ciencias del Mar y Limnología, National Autonomous University of Mexico

TUESDAY POSTER SESSIONS

Tuesday, February 17
5:30pm-8:00pm
Woodway Hall

#	Title	Presenter
Session 001		
34	Sufficiency of Self-documenting Data Exchange Standards	Felimon Gayanilo, Texas A&M University-Corpus Christi
Session 002		
35	Effect of Chain Length and Grafting Density on Oil Uptake in Amphiphilic Copolymer Grafted Silica Nanoparticle Systems	Kyle Bentz, University of Southern Mississippi
37	Effects of Oil Dispersant on Photodegradation of PAHs in Seawater	Zhengqing Cai, Auburn University
38	High Resolution Seafloor Data To Guide Sampling And Data Interpretation	Arne Diercks, University of Southern Mississippi
39	Molecular-level Identification of Metal-Containing Compounds from Oil Contamination Released from Natural Seeps and Anthropogenic Spills	Amy McKenna, Florida State University/National High Magnetic Field Laboratory
40	Oil-Dispersant-Sediment Interactions and Effects of Dispersant on Sorption/ Desorption of PAHs with Gulf Coast Marine Sediments	Xiao Zhao, Auburn University
41	Synthesis of cactus based-mucilage dispersant and titanium dioxide hybrid and its application on surface tension of oil/water emulsions	Wen Zhao, University of South Florida
42	Spatial Distribution of Natural Radionuclides in Soil, Sediment and Waters in Oil Spilled Areas in Niger Delta Region of Nigeria	Agbalagba Ezekiel, Federal University of Petroleum Resource
240	Dispersant Effectiveness Of Corexit 9500A For Fresh/Weathered Crude Oil And For Some Aliphatic/Aromatic Compounds Of Crude	Daria Boglaienko, Florida International University
Session 003		
43	Alternative Bacteria Removal method in polluted water via Cactus Mucilage	Tunan Peng, University of South Florida
Session 004		
45	Hindcast modelling for the persistence of floating oil released from natural seeps	Samira Daneshgar Asl, Florida State University
46	Oil Spill Risk Assessment of Singapore Strait Based on 3D Lagrangian Multiphase Oil Spill Modelling	Kai Gong, National University of Singapore
47	Validating Formulas For The Prediction Of Ascent Speed And Mass Transfer Coefficient For Liquid Oil Droplets And Gas Bubbles Under Pressure	Jonas Gros, École Polytechnique Fédérale de Lausanne
48	Volume flux measurements in the zone of flow establishment of an aerated plume	Chris Lai, Texas A&M University
49	Trajectory Modeling in support of the Texas City “Y” Oil Spill Response	Amy MacFadyen, National Oceanic and Atmospheric Administration
50	GCxGC comparison of Deepwater Horizon crude and Kirby Intermediate Fuel Oil (IFO)	Robert Nelson, Woods Hole Oceanographic Institution
51	Potential subsurface plume formation and fate in ultra-deepwater blowout simulations using BLOSOM (Blowout and Spill Occurrence Model)	Lawrence Sim, National Energy Technology Laboratory

#	Title	Presenter
Session 005		
52	Anger, Bitterness, and Social Support as Predictors of Mental Health Outcome Two-Year Post Gulf of Mexico Oil Spill in Residents Who Experienced Income Loss	Lorien Baker, University of Maryland School of Medicine
53	Can tributyltin be used as a positive control for obesogenic exposure in the American alligator?	Melissa Bernhard, College of Charleston
54	Deploying Community Health Workers to Bolster Community Resilience	Hannah Covert, Tulane University
55	A worst case scenario analysis for economic impact of oil spill incidence in Gulf of Mexico	Negar Dahi, Louisiana State University
56	Assessing Personalized Exposures of Importance: What We've Learned from Paired Indoor/Outdoor Air Sampling, Seafood Analyses, and Study Design in Southeast Louisiana	Jessi Howard, Tulane University
57	An Assessment of Petrogenic PAH Toxicity in Gulf Shellfish and Finfish using CALUX and Benzo[a]Pyrene Toxic Equivalency	Dan Jackson, University of Texas Medical Branch
58	The Contributions of Gender and Temperament to Self-Reported Resilience after the Gulf of Mexico Oil Spill	Ryan Jollie, University of Maryland School of Medicine
59	Risk Assessment of Remnants of Dioctyl Sodium Sulfosuccinate (DOSS) Following Deepwater Horizon Oil Spill: Should We Be Concerned?	Olalekan Ogunsakin, Tulane University
60	What does it mean? - Lessons from toxicological investigation of crude oil-dispersant impacts on ecological and model organisms	Xiaoping Pan, East Carolina University
61	Environmental Worry after Oil Spill: Relative Contributions of Anxiety and Gender	Sparkle Roberts, University of Maryland School of Medicine
62	Social Support, Race, and Psychological Distress among women in the Women and Their Children's Health Study (WaTCH) exposed to the Deepwater Horizon Oil Spill (DWOS)	Edward Trapido, Louisiana State University Health Sciences Center School of Public Health
63	Substance Use in Response to the Deepwater Horizon Oil Spill	Edward Trapido, Louisiana State University Health Sciences Center School of Public Health
64	A Multi-Level Investigation of Neighborhood Disadvantage and Depression in the Women and Their Children's Health (WaTCH) Study in Louisiana	Edward Trapido, Louisiana State University Health Sciences Center, School of Public Health
65	Mental and Behavioral Health Effects of the Deepwater Horizon Gulf Oil Spill: Anxiety, Resilience, Treatment Methods, and Future Recovery	Anthony Speier, Louisiana State University Health Sciences Center
Session 006		
81	Temporal variations in the vertical distribution of deep-water scattering layers in the Gulf of Mexico	Kevin Boswell, Florida International University
82	Nutrient Concentrations Along The River Plume Salinity Gradient In The Northern Gulf of Mexico Over The Past 30 Years	Annalisa Bracco, Earth and Atmospheric Sciences - Georgia Institute of Technology

#	Title	Presenter
83	Interannual Recruitment Dynamics for Resident and Transient Marsh Species: Evidence for a Lack of Impact by the Macondo Oil Spill	Just Cebrian, Dauphin Island Sea Lab
84	Monitoring benthic habitats within Mississippi Sound using high precision multibeam sonar	Ian Church, University of Southern Mississippi
86	Microbial community response to natural organic matter enrichments after being primed by Deepwater Horizon oiling	Annette Engel, University of Tennessee-Knoxville
87	Isotopic Comparison Of The Eye Lens With Other Tissues In Golden Tilefish: New Proxies For Site Fidelity And Trophic Position Of Oil Exposed Fish	Jenny Fenton, University of South Florida
88	Imprint Of The Deep Water Horizon Oil And Methane Carbon In Suspended Particles In The Gulf Of Mexico	Ana Fernández, Georgia Institute of Technology
89	Gulf of Mexico Marine Organism's Susceptibility to Photo-enhanced Toxicity of Fluoranthene at Different Life Stages and Ultraviolet Light Intensities	Bryson Finch, Oregon State University
90	Photo-enhanced Toxicity of Fresh and Weathered Macondo Crude Oils to Marine Organisms under Natural and Artificial Sunlight	Bryson Finch, Oregon State University
91	Age-based Batch Fecundity in Red Snapper Before and After the Deepwater Horizon Oil Spill of 2010	Devin Flawd, University of Florida
92	Polycylic Aromatic Hydrocarbon Concentration and Fish Liver Condition around the Ixtoc-1 Well Area, Southwest Gulf of Mexico	Adolfo Gracia, Instituto de Ciencias del Mar y Limnología, National Autonomous University of Mexico
93	The Combined Effect of Environmental and Anthropogenic Stressors on Fish Health	Robert Griffitt, University of Southern Mississippi
94	Investigating the impact of the Deepwater Horizon oil spill on mercury concentrations in northern Gulf of Mexico fishes	Alexandra Harper, Florida State University
95	Temporal and spatial variation in the carbon and nitrogen isotope ratios of mesozooplanton in the central Gulf of Mexico	Sharon Herzka, Center for Scientific Research and Higher Education of Ensenada (CICESE)
96	Baseline information for fish growth rates and microchemistry obtained from pre-Columbian fish otoliths	Brock Houston, University of South Florida
97	Biomarkers of exposure to polycyclic aromatic hydrocarbons in Gulf of Mexico reef fishes	Margaret James, University of Florida
98	Deepwater Horizon impacts on the pelagic food web: Stable isotope constraints on zooplankton carbon and nitrogen sources	Drake Lee-Patterson, Georgia Institute of Technology
99	A Simulation Analysis of the Plankton Fate of the Deepwater Horizon Oil Spills	Jason Lenes, University of South Florida
100	Nematode community structure in northern Gulf of Mexico continental shelf sediments following the Deepwater Horizon oil spill	Ceil Martinec, Troy University
101	Potential oil spill effects on behavior and group size of common bottlenose dolphins (*Tursiops truncatus*) in Galveston Ship Channel	Erin Mattson, Texas A&M University at Galveston
103	Dynamics of Demersal Fish Communities on the Northern Gulf of Mexico Continental Shelf	Steven Murawski, University of South Florida
104	Spatial and Temporal Effects of the Deepwater Horizon Oil Spill on Estuarine Fish Growth in the Gulf of Mexico	Debra Murie, University of Florida
105	Transcriptional Responses of Blue Crabs and Bay Anchovies to Surrogate Oil	Joseph Neigel, University of Louisiana at Lafayette
107	Phytoplankton associations in the northeastern Gulf of Mexico: vertical profiles between Pensacola Bay and DeSoto Canyon	James Nienow, Valdosta State University

#	Title	Presenter
108	Intra-specific differences in the food resources used by Seaside Sparrow (*Ammodramus maritimus*): a consequence of prey availability?	Jill Olin, Louisiana State University
109	Benthic foraminifera as environmental proxies for PAH pollution following the Hercules 265 event	Bryan O'Malley, University of South Florida
110	Further Evidence for the Presence of Deepwater Horizon Oil on the West Florida Shelf	John Paul, University of South Florida
112	Oil Spills, Adaptation, and Gene Flow: Genomic Insights for Fisheries Management in Impacted Systems	David Portnoy, Texas A&M - Corpus Christi
114	Understanding spatial trends in biliary PAH metabolite concentration in Gulf of Mexico demersal fishes using sediment PAH concentration and sediment grain size	Susan Snyder, University of South Florida
115	Phytoplankton associations in the northeastern Gulf of Mexico: changes in the net plankton association, 2011 - 2014	Courtney Bryller, Valdosta State University
117	Putative eye abnormalities in Atlantic midshipman, Porichthys plectrodon (Batrachoidiformes: Batrachoididae) from the North-Central Gulf of Mexico off Louisiana	Stephen Bullard, Auburn University
118	In situ evaluation of hepatocyte genotoxicity in marine fish following the Deepwater Horizon oil spill	Erin Pulster, Mote Marine Laboratory
119	Parasite component community of Fundulus grandis as an indicator of acute and chronic environmental effects of the 2010 BP Deepwater Horizon Oil Spill in Barataria Bay, Louisiana	C.F. Ruiz, Texas A&M University
120	Composition and quantity of calcareous nanoplankton assemblages present during the 2010 Macondo Oil Spill in the Gulf of Mexico Current estimates	Sherwood Wise, Florida State University
Session 007		
161	Controls On Methane Oxidation At Seep Sites In the Gulf Of Mexico	Jessica Battles, University of Georgia
162	A Quantitative Measure of the Hydrocarbon Consumption Rate Using *Alcanivorax borkumensis*	Lauren Bookstaver, Brown University
163	Unraveling 'Who Is Who' In Methanogenic Oil Degradation	Ana Cavaleiro, Centre of Biological Engineering, University of Minho
164	Biodegradation of dispersed versus non-dispersed oil by surface microbial communities	Sarah Harrison, University of Georgia
165	Bioremediation of Crude Oil by Indigenous Bacteria	Xiaoke Hu, Yantai Institute of Coastal Zone Research Chinese Academy of Sciences
166	Initial Investigations Of The Microbial Ecology Of Tar Balls And Their Impact On Anaerobic Respiratory Activity	Jamie Johnson, University of Oklahoma
167	Environmental conditions are key to controlling the development of oil degraders in the Gulf of Mexico waters	Zhanfei Liu, The University of Texas at Austin
168	Effects of temperatures and oil concentrations on biodegradation of light Louisiana sweet crude oil in Gulf coastal seawaters	Jiqing Liu, The University of Texas at Austin Marine Science Institute
169	Intact Ribosomal RNA in Mercury-Poisoned Sediment Trap Samples: Preservation or Growth?	Barbara MacGregor, University of North Carolina at Chapel Hill
170	Single-cell genomics reveals features of uncultured, indigenous deep-sea Bacteria that dominated the DWH plume and contaminated surface sediments	Olivia Mason, Florida State University

#	Title	Presenter
171	Interpretation of oxygen profiles in the aftermath of the BP/Deepwater Horizon hydrocarbon discharge	Christof Meile, University of Georgia
172	A spatial and temporal investigation of carbon isotopes in POC in the Gulf of Mexico	Kelsey Rogers, Florida State University
173	Unraveling Microbial Degradation of Dispersant and Water-Soluble Oil Compounds in Deep Seawater from the Gulf of Mexico using Ultrahigh Resolution Mass Spectrometry	Michael Seidel, University of Georgia
174	Polycyclic aromatic hydrocarbon degradation by northern Gulf of Mexico Vibrios	Shuo Shen, The University of Southern Mississippi
175	Biodegradation of Oil by Microorganisms from Marine Sediments at High Pressure	Ana Gabriela Valladares, Hamburg University of Technology
Session 008		
176	Effects of swell on transport and dispersion of oil plumes within the ocean mixed layer	Marcelo Chamecki, Pennsylvania State University
177	Diel Vertical Migrations of Zooplankton and Turbulent Mixing Numerical Simulation in Relation to Potential Oil Spills	Cayla Dean, Nova Southeastern University
178	Preconditioning With Level-Set Method For Air-Water Two-Phase Flow Simulations	Daniel Espinal, University of Miami
179	A study of Land/Sea Breeze and Critical Latitude Resonant Effect Using a High-Resolution Ocean-Atmosphere Coupled Model of the Gulf of Mexico	Chuan-Yuan Hsu, Texas A&M University
180	A Nearshore Dynamics Model of Oil Spills	Juan Restrepo, Oregon State University
181	Observed downwelling in a warm core eddy during Hurricane Isaac's intensification	Lynn Shay, Rosenstiel School of Marine and Atmospheric Science, University of Miami
182	The Air-Sea Interface in the Presence of Oil and Dispersants: Multi-Phase Modeling Coordinated with Laboratory Experiments	Alexander Soloviev, Nova Southeastern University
183	On the challenge of remote estimation of surface oil volume in the ocean: Examples from satellite and airborne measurements	Shaojie Sun, University of South Florida
Session 009		
184	Evaluation of Droplet/Bubble Models for Subsurface Dispersant Application	E.E. Adams, Massachusetts Institute of Technology
185	A Quantitative Insight into the Growth of *Alcanivorax borkumensis* under Different Inoculation Conditions	Michelle Bookstaver, Brown University
186	Novel insight into the role of heterotrophic dinoflagellates in the fate of crude oil in the sea	Edward Buskey, University of Texas at Austin
187	The Role of Span 80 as a Component of Corexit for Oil that Reaches the Shore	Yufei Duan, Tulane University
188	Chromatographic Separation and Characterization of Source and Surface Oil from the Deep Water Horizon	Tod Grusenmeyer, Tulane University
189	Quantifying Degradation Products of Louisiana Sweet Crude Oil In The Gulf Waters	Xinping Hu, Texas A&M University - Corpus Christi
190	Bacterial adhesion and biofilm formation over surface with printed oil micro-droplet array	Maryam Jalali-Mousavi, Texas Tech University
191	Dynamics of Oil Droplet Impinging on Air-Water and Oil-Water Interfaces	Seongho Kim, Texas Tech University
192	Chemical Dispersants: An Oil Biodegradation Friend Or Foe?	Alette Langenhoff, Wageningen University

#	Title	Presenter
193	Experimental investigation on effects of dispersant on breakup of an oil slick under breaking waves	Cheng Li, Johns Hopkins University
194	Quantification of copepod escape success after varied exposure to crude oil and chemical dispersants	Michele Mei, University of Texas at Austin
195	Effects of Oil and Dispersants on Swimming Behaviors of Copepods Exposed to High Hydrostatic Pressure	Ai Nihongi, University of Wisconsin-Milwaukee
196	CreeLog a dissolving 1 kilogram, oil destroyer	John Olsen, Cree Industries
197	Radium Isotopes as Conservative Tracers of Hydrocarbon Transport Through the Water Column	Richard Peterson, Coastal Carolina University
198	The hydrodynamics of a subsurface oil release in a flume tank	Brian Robinson, Fisheries and Oceans Canada, Bedford Institute of Oceanography
199	Characterization of > 30,000 Newly Discovered Biotic and Abiotic Petroleum Transformation Products and Their Potential Impact on Stable Droplet Formation	Ryan Rodgers, National High Magnetic Field Laboratory Florida State University
200	Interactions between Nanoparticles and Bacteria at Oil/Water Interfaces: A Dynamic Single Droplet Analysis System	Maswazi Sihlabela, Brown University
231	Interactions between calanoid copepods and oil droplets: they take big ones and make smaller ones	J.R. Strickler, University of Wisconsin-Milwaukee
232	Estimating rates of hydrocarbon biodegradation in deep waters of the Gulf of Mexico	Anne Thessen, University of Maryland Center for Environmental Science
233	Effect of Bacteria and Diatom Interactions on Mechanical Properties of Oil-Water Interfaces	Liana Vaccari, University of Pennsylvania
234	Collision Rates Between Oil Droplets and Particulate Matter: Mechanisms and Effect of Droplet Size Distribution	Evan Variano, University of California, Berkeley
235	Stochastic, low dimensional parameterizations for the aging of oil	Shankar Venkataramani, University of Arizona
236	Intrusion Dynamics Of Small Oil Droplets Released From A Deep Ocean Blowout	Dayang Wang, Massachusetts Institute of Technology
237	Simulation of Droplet Formation Process and Transport Due to Wave Actions during the Deepwater Horizon Oil Spill	Lin Zhao, New Jersey Institute of Technology
238	Natural Granular Materials As A New And Effective Crude Oil Treatment Method	Daria Boglaienko, Florida International University
239	Comparative Analysis Of Floating Crude Oil Removal By Capturing It With Natural Material vs Dispersion Of Oil With Corexit 9500A® In Presence And Absence Of Granular Particles	Daria Boglaienko, Florida International University

The Coastal Waters Art & Science Camp was designed to enhance student understanding of the natural world and expand their ability to communicate both artistically and scientifically. “In my artwork, I depicted the deterioration of the marsh and land loss over time.” (Photo Credit: CWC, “Window of Time” by April Olivier)

WEDNESDAY FEBRUARY 18

8:00am-6:00pm	Registration & Check-in Open	Galleria Foyer
	Exhibits Open	Galleria Foyer
	Speaker Ready Room Open	San Felipe Room
8:00am-8:00pm	Poster Hall Open	Woodway Hall

Scientific Program Schedule

Starting at 7:30am	BREAKFAST	Galleria Foyer
8:30am-12:00pm	Session 005	Galleria II
	Session 006	Galleria I
	Session 007	Plaza II
	Session 008	Plaza I
	Session 009	Galleria III
	Session 010	Galleria IV
10:00am-10:30am	BREAK	Galleria Foyer
12:00pm-1:30pm	LUNCH	
1:30pm-5:00pm	Session 011	Galleria II
	Session 012	Plaza I
	Session 013	Plaza II
	Session 014	Galleria IV
	Session 015	Galleria I
	Session 016	Galleria III
3:00pm-3:30pm	BREAK	Galleria Foyer
5:30pm-8:00pm	Poster Session (featuring Sessions 010 - 019) & Reception	Woodway Hall

Associated Meetings & Events

8:00am, 10:00am, & 3:00pm	GRIIDC Sessions	West Alabama
12:00pm-1:30pm	COMPASS Lunchtime Workshop	Royal Suite
5:15pm-6:45pm	Gulf Science and Restoration Programs Update & Panel Discussion	Galleria II
7:00pm-8:00pm	Science Partnerships Enabling Rapid Response (SPERR)	Royal Suite

Session 005 (Continued from Tuesday)

GAPS TO GAINS: TRANSDISCIPLINARY APPROACHES IN EXAMINING ENVIRONMENTAL, HEALTH, AND ECOSYSTEM SERVICES RISK AND RESILIENCE IN GULF COAST COMMUNITIES

Wednesday, February 18, 8:30a – 12:00p, Galleria II

Maureen Lichtveld, Tulane University School of Public Health and Tropical Medicine*
Claudia Thompson, National Institute of Environmental Health Sciences
David Yoskowitz, Texas A&M University-Corpus Christi
Ashley Ross, Sam Houston State University
Bernard Goldstein, University of Pittsburgh**

The session addresses two conference themes: public health and socio-economics; and education, outreach, and communication. Presentations will focus on risk reduction and resilience strategies associated with the reciprocal impact of people and ecosystems. Three modules answer the key questions:

“What have we learned” features key research findings to date demonstrating the interconnectedness between public- and ecosystem services health;

“What does it mean” includes presentations elucidating the relevance of the research findings to date to our Gulf Coast communities; and

“How can it be used” focuses on research translation and demonstrates the role of evidence-based practical tools in strengthening community health and wellbeing.

From design to dissemination, this session highlights illustrative examples of community-academic partnerships and transdisciplinary team science applicable beyond disaster-related research.

**Session Organizer*

***Capstone Speaker*

Time	Title	Presenter
8:30a-8:45a	A targeted risk assessment following the Deep water horizon oil spill: Polycyclic Aromatic Hydrocarbon Exposure in Vietnamese- American Shrimp Consumers	Mark Wilson, Tulane University
8:45a-9:00a	Maintaining Natural Habitats and Biodiversity Could Increase Resilience of Gulf of Mexico Coastal Communities and Support Human Health and Well-Being	Paul Sandifer, Private
9:00a-9:15a	Translating Lessons from the Gulf Oil Spill into Improved Disaster Health Research	Aubrey Miller, National Institute of Environmental Health Sciences
9:15a-9:30a	Approach for Improved Public Health Guidance for Beach Use During and After Oil Spills	Kristina Mena, University of Texas Health Science Center
9:30a-10:00a	The Gulf Research Program - Strategic Vision and Initial Activities	Chris Elfring, National Academy of Sciences
10:00a-10:30a	Coffee Break	
10:30a-10:45a	Cultural differences across disaster resilient communities	Chris Mundorf, Tulane University School of Public Health and Tropical Medicine
10:45a-11:00a	Building Responder Resilience and Reducing Mental Health Consequences During Disasters Through Training; Final Outcome Reports	Joseph Hughes, National Institute of Environmental Health Sciences
11:00a-11:15a	Oil Spill Community Engagement: Transdisciplinary Lessons to Support Community Resilience	Ann Walker, SEA Consulting Group
11:15a-11:30a	Developing an Applied Community Based Participatory Research Curriculum Tailored to Gulf Cost Communities in Louisiana	Rebekah Angove, Louisiana Public Health Institute
11:30a-12:00p	The Value of Transdisciplinary Research Integrating Public Health and Ecosystem Services Research	Bernard Goldstein, University of Pittsburgh

Session 006 (Continued from Tuesday)

EMERGING ECOLOGICAL IMPACTS OF THE DEEPWATER HORIZON OIL SPILL: EVALUATING ECOSYSTEM CHANGE AND RESILIENCY

Wednesday, February 18, 8:30a – 12:00p, Galleria I

Steven Murawski, University of South Florida*
Kendra Daly, University of South Florida
Jeff Chanton, Florida State University

The Deepwater Horizon (DWH) oil spill resulted in thousands of tons of oil entering diverse ecotypes of the Gulf of Mexico. These included the abyssal-benthic, the bathypelagic, continental shelf, near-coastal, and estuarine/salt marsh ecosystems. During the intervening five years, considerable information has been derived documenting the production, species composition and distribution of ecological communities in all of these environments. In some cases, clear trends in population and community dynamics have emerged. In other cases, data show no discernible changes that can be linked with the DWH event. The lack of pre-impact data in some cases have resulted in ecologists either inferring impacts from post-event changes, or essentially substituting “space for time” in comparing ecosystems within the impact zone to pseudo-control areas elsewhere. This session will bring together field ecologists, laboratory researchers and modelers to share information on the interpretation of ecological data sets related to the DWH incident. In particular, the session will focus on understanding ecosystem resiliency (ability of the ecosystem to return following perturbation) in the context of multiple simultaneous stressors.

**Session Organizer*

Time	Title	Presenter
8:30a-8:45a	A Generalized Additive Model Predicting Abundance of Pelagic Species within the Gulf of Mexico	Holly Perryman, University of Miami, Rosenstiel School of Marine and Atmospheric Science
8:45a-9:00a	Evaluation of Multiple Stressors in Combination with Oil using *Fundulus Grandis*	Maria Sepulveda, Purdue University
9:00a-9:15a	Using Acrobat Ants to Determine the Effect of Macondo Oil on Saltmarsh Terrestrial Arthropod Food Webs	Linda Hooper-Bui, Louisiana State University
9:15a-9:30a	Stable Isotopes in Fish Eye Lenses as Potential Recorders of Trophic and Geographic History	Amy Wallace, University of South Florida
9:30a-9:45a	Impact of the Deepwater Horizon incident on planktonic ecosystems: Carbon is important, but so is Nitrogen!	Joseph Montoya, Georgia Institute of Technology
9:45a-10:00a	A correlation of vitellogenin and polycyclic aromatic hydrocarbons in red snapper and golden tilefish exposed to the Deepwater Horizon oil spill	Dana Wetzel, Mote Marine Laboratory
10:00a-10:30a	Coffee Break	
10:30a-10:45a	Cytokine expression patterns in red snapper and golden tilefish collected from the vicinity of the Deepwater Horizon oil spill in 2013-2014	Kristina Deak, University of South Florida, College of Marine Science
10:45a-11:00a	Post exposure, sub-lethal effects of oil exposure on bay anchovy (*Anchoa mitchilli*) larvae	Edward Chesney, Louisiana Universities Marine Consortium
11:00a-11:15a	Impacts of a Marine Gas Well Blowout on PAH Contamination in Sediments and Fish	Isabel Romero, University of South Florida
11:15a-11:30a	Atlantis Ecosystem Modelling of the DWH Oil Spill	Cameron Ainsworth, University of South Florida
11:30a-11:45a	Ecosystem modeling: an approach to estimate effects of PAH on fishes	Lindsey Dornberger, University of South Florida
11:45a-12:00p	Discussion	

Session 007

MAKING A LIVING ON HYDROCARBONS: DIVERSITY, METABOLIC POTENTIAL, AND REGULATION OF MICROBIAL HYDROCARBON OXIDATION

Wednesday, February 18, 8:30a – 12:00p, Plaza II

Samantha Joye, University of Georgia*
Olivia Mason, Florida State University
Tony Gutierrez, Heriot-Watt University**

The Northern Gulf of Mexico is a prolific hydrocarbon basin home to over 22,000 natural oil and gas seeps. As a result, the indigenous sediment and pelagic microbial communities are exposed to variable fluxes, concentrations and mixtures of oil and gas over space and time. Following the Deepwater Horizon oil well blowout, numerous reports described the response of the pelagic microbial community to the oil and gas infusion. However, such data at natural seeps is lacking. Though patterns of benthic sulfate reduction and anaerobic methane oxidation have been reported at a few Gulf seep sites, much more remains to be learned about the diversity and metabolic capabilities of microbial communities inhabiting natural seeps. Additional data documenting the patterns and variability in hydrocarbon degradation rates in both the Gulf's sediments and waters are also needed.

**Session Organizer*

***Keynote Speaker*

Time	Title	Presenter
8:30a-9:00a	Preparedness For A Major Deepwater Spill In The Northeast Atlantic, And Uncovering Novel Oil-Degraders In The Ocean	Tony Gutierrez, Heriot-Watt University
9:00a-9:15a	Aerobic biodegradation potential of oil hydrocarbons in the water column and deepsea sediments in the northeastern Gulf of Mexico	Xiaoxu Sun, Georgia Institute of Technology
9:15a-9:30a	Anaerobic hydrocarbon degradation by sedimentary microorganisms from the northern Gulf of Mexico	Boryoung Shin, Georgia Institute of Technology
9:30a-9:45a	Why Is Chlorophyll Elevated Near Natural Seeps In The Gulf Of Mexico? Evidence For Bottom-Up, And Top-Down Controls On Planktonic Microbes	Nigel D'souza, Lamont-Doherty Earth Observatory, Columbia University
9:45a-10:00a	Hercules 265 Rapid Response: Immediate ecosystem impacts of a rig natural gas blowout incident	Sarah Weber, Georgia Institute of Technology
10:00a-10:30a	Coffee Break	
10:30a-10:45a	Spatial biogeography of aerobic methane-oxidizing bacteria at natural methane seeps in the Gulf	Matthew Saxton, University of Georgia
10:45a-11:00a	Shifts of microbial assemblages as indicators of metabolic potential in the sediments and the water column of the Deepwater Horizon Oil Spill in the Gulf of Mexico	Nicole Scott, University of Chicago
11:00a-11:15a	Microbial Degradation Of Polar Crude Oil Components - A Metabolomics Approach	Yina Liu, Woods Hole Oceanographic Institution
11:15a-11:30a	Using Comparative Metagenomics to Analyze Microbial Degradation of Polar Crude Oil Components	Rachel Simister, Haverford College
11:30a-11:45a	Do Chemical Dispersants Impede or Hasten Microbial Degradation of Hydrocarbons in Surface Waters?	Sairah Malkin, University of Georgia
11:45a-12:00p	Measuring in situ microbial oil degradation in Gulf of Mexico deep-water sediment using long-term benthic lander enrichment experiments	Beth Orcutt, Bigelow Laboratory for Ocean Sciences

Session 008

AIR-SEA INTERACTIONS AND OIL SPILLS: PROGRESSION FROM SEMI-EMPIRICAL TO PHYSICS-BASED MODELS

Wednesday, February 18, 8:30a – 12:00p, Plaza I

Brian Haus, University of Miami*
Alexander Soloviev, Nova Southeastern University
Joseph Katz, Johns Hopkins University**
Hans Graber, Center for Southeastern Tropical Advanced Remote Sensing - University of Miami**
Lian Shen, University of Minnesota**

Air-sea interaction in the presence of hydrocarbon products is characterized by a variety of physical and biochemical processes. The scales of these processes range from sub-millimeter length scales to atmospheric boundary layer length scales. Oil spills affect aqueous viscous, thermal and diffusion molecular sublayers, modify surface wave spectra and alter surface drift velocities. Remarkably, surface and interfacial tension forces substantially affect oil spill dynamics. Application of dispersants and surfactants dramatically changes the interfacial tension forces, while the oil aging process is a significant factor in oil spill fragmentation and emulsification under the wind/wave action. On somewhat larger scales, turbulence dominates oil transport and may also include spatially-coherent organized motions (Langmuir cells, ramp-like structures, frontal interfaces, etc.). Atmospheric processes, such as storms, squall lines and rain cells, impact oil spills. Thermal stratification and the presence of freshwater plumes in the near-surface layer of the ocean change the surface velocity field and thus conditions for oil spill propagation. Progression from semi-empirical to physics-based models is warranted for the development of improved hydrocarbon transport models. This session will report on new models and parameterizations of air-sea sub grid scale processes. New developments based on theoretical and computational work, field and laboratory experiments and remote sensing will be featured.

**Session Organizer*

***Invited Speaker*

Time	Title	Presenter
8:30a-8:45a	Session Introduction	
8:45a-9:00a	Air-sea oil spill interactions: In defense of semi-empirical formulas	Willliam Lehr, National Oceanic and Atmospheric Administration
9:00a-9:15a	Oily Marine Aerosol Production by Raindrop Splashing	Joseph Katz, Johns Hopkins University
9:15a-9:30a	Modeling of Crude Oil Evaporation Using a Bottom-Up Approach: Mass Transfer Considerations and Predicting Potential Secondary Organic Aerosol Formation	Greg Drozd, University of California Berkeley
9:30a-9:45a	Effects of Corexit components on oil alkanes in atmospheric air/seawater interfaces: A molecular simulation study	Zenghui Zhang, Louisiana State University
9:45a-10:00a	Wavenumber Dependence of Surface Roughness Over a Variety of Wind Conditions	Nathan Laxague, University of Miami
10:00a-10:30a	Coffee Break	
10:30a-10:45a	Air-Sea Interactions Observed by Synthetic Aperture Radar	Hans Graber, CSTARS - University of Miami
10:45a-11:00a	Surfactant Associated Bacteria in the Near-Surface Layer of the Ocean	Bryan Hamilton, Nova Southeastern University
11:00a-11:15a	Observations of internal bores linked to a river plume in northern Gulf of Mexico	Kimberly Huguenard, Texas A&M University-Corpus Christi
11:15a-11:30a	Physics-based simulations of wave-ocean-wind interaction processes related to oil spill transport	Lian Shen, University of Minnesota
11:30a-11:45a	Influence of Surface Waves on Ocean Transport and Material Dispersion in Hurricane Isaac and Winter Storms	Milan Curcic, University of Miami
11:45a-12:00p	Laboratory observations of spray generation over fresh, salt and oiled water in very high winds	Brian Haus, University of Miami

Session 009

FATE OF OIL DROPLETS – BREAKUP, TRANSPORT, AGGREGATION AND DEGRADATION OF OIL DROPLETS VIA PHYSICAL, CHEMICAL AND BIOLOGICAL PROCESSES

Wednesday, February 18, 8:30a – 12:00p, Galleria III

Jian Sheng, Texas Tech University*
Kathleen Stebe, University of Pennsylvania**
Joseph Katz, The Johns Hopkins University

In this session, we bring the expertise from biological, chemical and physical science disciplines, to address a series of key processes affecting the fate of crude oil spills, including physical breakup and dispersion of oil patches, aerosolized oil with wind wave interactions, interactions of petroleum with marine organisms and microbes, biodegradation of oil and their potential impacts on public health as well as marine ecosystems. The session will be divided into two main sub-themes:

1. Breakup, dispersion, and transport of oil patches; and
2. Interactions of microbes, planktons and surfactants at complex oil water interfaces.

**Session Organizer*

***Invited Speaker*

Time	Title	Presenter
8:30a-8:45a	Session Introduction	
8:45a-9:00a	Turbulent crude oil jets in crossflow	David Murphy, Johns Hopkins University
9:00a-9:15a	Acoustic Scattering Measurements of Subsurface Chemical Dispersant Efficacy in the Presence of Gas	Paul Panetta, Applied Research Associates, Inc.
9:15a-9:30a	Partial dissolution of oil drops in a turbulent field	Andrea Prosperetti, Johns Hopkins University
9:30a-9:45a	Evolution of Droplet Size Distribution in Deepwater Horizon Blowout: Simulations Using VDROP Model	Lin Zhao, New Jersey Institute of Technology
9:45a-10:00a	Nanoparticle-coated oil droplets formed via bubble bursting at a compound interface	Jie Feng, Princeton University
10:00a-10:30a	Coffee Break	
10:30a-10:45a	Complex Interfaces, Their Mechanics and Implications	Kathleen Stebe, University of Pennsylvania
10:45a-11:00a	Formation of Oil-in-Seawater Emulsions with Nanoparticle and Surfactant Dispersants	Andrew Worthen, University of Texas at Austin
11:00a-11:15a	Presence of gelatinous zooplankton may enhance rate of hydrocarbon breakdown	Brad Gemmell, Marine Science Department, University of Texas at Austin
11:15a-11:30a	Probing Interactions of *Alcanivorax borkumensis* with Single Oil Droplets	Michael Godfrin, Brown University
11:30a-11:45a	Effect of motility on bacterial encounter rate with oil droplet	Mehdi Molaei, Texas Tech University
11:45a-12:00p	Bacterial Response to Interfacial Stress in a Model of Hydrocarbon Bioremediation	Tagbo Niepa, University of Pennsylvania

Session 010

FATE AND TRANSPORT OF SUBMERGED OIL MATS AND SURFACE RESIDUAL OIL BALLS IN BEACHES AND COASTAL WETLANDS

Wednesday, February 18, 8:30a – 12:00p, Galleria IV

Prabhakar Clement, Auburn University*
John Pardue, Louisiana State University
Michel Boufadel, New Jersey Institute of Technology

The Deepwater Horizon oil spill deposited large amounts of residual emulsified oil in the form submerged residual oil mat (SOMs, which are often called as tar mats) and surface residual oil balls (SRBs, which are often called tar balls), in beach and wetland environments located along the Gulf of Mexico. There is sufficient field evidence that the presence of SOMs and SRBs continue to be a significant concern to local coastal communities. Also, the persistence of a variety of toxic chemicals, such as PAHs, alkylated PAHs and other oxygenated hydrocarbons, in these residues could cause negative effects on shoreline ecosystems. The objective of this session is to invite researchers to present their current understanding of the fate of SOMs and SRBs currently trapped in beach and wetland environments.

**Session Organizer*

Time	Title	Presenter
8:30a-8:45a	Session Introduction	
8:45a-9:00a	Physical Dynamics of Sand and Oil Agglomerates: Field and Laboratory Studies of Artificial Proxies	Soupy Dalyander, U.S. Geological Survey
9:00a-9:15a	Bottom Currents and Temperature on DWH Surface Residual Ball Degradation	John Kaba, Florida State University
9:15a-9:30a	Impact of Storm-driven Washover Events on MC252 Crude Oil Fate on Coastal Headland Beaches	John Pardue, Louisiana State University
9:30a-9:45a	Long-Term Monitoring Data to Describe the Fate of Polycyclic Aromatic Hydrocarbons in Deepwater Horizon Oil Submerged Off Alabama's Beaches	Fang Yin, Auburn University
9:45a-10:00a	Tar Balls on Elmer's Island, Louisiana: Identifying Technology and Geochemical Characterization	Qi Fu, University of Houston
10:00a-10:30a	Coffee Break	
10:30a-10:45a	Fate of Oxidized Components of Weathered Deepwater Horizon Oil: Lessons Learned from Dissolution Experiments	Robert Swarthout, Woods Hole Oceanographic Institution
10:45a-11:00a	Biodegradation and Weathering of Alkylated PAHs in Coastal Marsh and Mangrove Systems	Vijai Elango, Louisiana State University
11:00a-11:15a	Microbial Community Analysis of Deepwater Horizon Tar Balls	Nikaela Flournoy, University of Alabama
11:15a-11:30a	Characterization of the Macondo crude oil and environmental oil spill samples by APCI- and APPI-GC/MS	Vladislav Lobodin, National High Magnetic Field Laboratory
11:30a-11:45a	Biodegradation of Macondo Well oil in coastal sediments: Influence of temperature and nutrients	Bennett Greenwood, Bigelow Laboratory for Ocean Sciences
11:45a-12:00p	Aryl Hydrocarbon Receptor Activity of GoMRI Hydrocarbon Intercalibration Experiment (HIE) Samples	Charles Miller III, Tulane University

Session 011

IMPROVING TOOLS FOR MARINE OIL SPILL RESPONSE: LESSONS LEARNED AND APPLIED

Wednesday, February 18, 1:30p – 5:00p, Galleria II

David Hollander, University of South Florida*
Cortis Cooper, Chevron Energy Technology Corp.
William Lehr, National Oceanic and Atmospheric Administration
Marcia McNutt, AAAS - Science Magazine**

The Deepwater Horizon (DWH) Incident taxed the marine oil spill response capabilities of industry and government in ways not anticipated based on the history of marine oil spills. In many cases, decisions to employ particular response techniques were made based on best professional judgment with incomplete information. In the intervening five years since DWH, considerable research, technological development and advances in the operational doctrines of marine spill response have occurred. The deep blowout scenario was complicated by the presence of submerged oil plumes, consumption of oil and gases by microbes in the sub-surface and by the unknown efficacy of the novel use of dispersants injected at the well head, among other issues. Because the spill was initially offshore, understanding the costs and benefits of remediation activities vs. more traditional clean-up activities shore-side is a pivotal concern that is not yet fully resolved. The response “toolbox” for DWH included skimming, booming and burning of oil, use of surface and deep dispersants, mechanical cleanup of beaches and marshes, use of sand berms and physical structures intended to minimize oil entering sensitive shoreside habitats and releases of impounded fresh waters intended to dilute or flush oil back offshore. How successful were these and other response measures and what were their consequences?

**Session Organizer*

***Keynote Speaker*

Time	Title	Presenter
1:30p-2:00p	Science in Support of Decisions: Lessons from Deepwater Horizon	Marcia McNutt, AAAS
2:00p-2:15p	CFD study of the internal hydrodynamics affecting a finite turndown ratio in an oil-water separation hydrocyclone	Andre Benard, Michigan State University
2:15p-2:30p	Active Bioremediation As A Remedial Option For Oiled Beach Sands	John Pardue, Louisiana State University
2:30p-2:45p	Science Partnerships Enabling Rapid Response (SPERR): Designing a Strategy for Improved Scientific Collaboration during Oil Spill Crises	Theo Gibbs, Stanford ChangeLabs
2:45p-3:00p	Visualization of blowout modeling output facilitates model evaluation and impact assessment to the water-column	Claire Paris, Rosenstiel School of Marine & Atmospheric Science, University of Miami
3:00p-3:30p	Coffee Break	
3:30p-3:45p	Scaled Experimental Study in order to Use Unmanned Ships for Boom Towing	Jose Giron-Sierra, Universidad Complutense de Madrid
3:45p-4:00p	Estimating and testing oil properties data for spill weathering models	William Lehr, National Oceanic and Atmospheric Administration
4:00p-4:15p	Excitation Emission Matrix fluorescence of oil dispersion: implications for petroleum detection during spills	Mary Abercrombie, University of South Florida, College of Marine Science
4:15p-4:30p	Response System Effectiveness in Reducing the Risk Associated With Large Oil Spills in the Gulf of Mexico	Muhammad Zulqarnain, Louisiana State University
4:30p-4:45p	A Neural Network Approach for the Detection of Oil Spills Applied to SAR Imagery	Juan Pinales, University of Miami
4:45p-5:00p	Comparative Analysis of the Ixtoc and Deepwater Horizon Blowouts Reveal that Marine Oil Snow Sedimentation (MOSSFA) Maybe the Rule, not the Exception	David Hollander, University of South Florida, College of Marine Science

Session 012

TIME SERIES STUDIES OF CHEMICAL TRANSFORMATIONS, FLUXES AND TRACERS ASSOCIATED WITH ACCIDENTAL AND NATURAL OIL AND GAS RELEASES

Wednesday, February 18, 1:30p – 5:00p, Plaza I

Laura Lapham, University of Maryland Center for Environmental Science*
Christopher Martens, University of North Carolina at Chapel Hill

During the Deepwater Horizon petroleum blowout event, chemical and physical partitioning of enormous volumes of natural gas, aqueous soluble and insoluble oil components, dispersants and oil-flocculent materials led to the formation of large sub-surface hydrocarbon intrusions, widespread occurrence of surface oil slicks and sheens and coastal and offshore oiled-sediment accumulations. What are the temporal and spatial scales of the impacts of sub-surface oil and gas intrusions and the sinking of aggregated flocculent oil-rich particles to the sediment and oil accumulation in shallow and deep sediments? What is the fate of new carbon derived from the blowout? What has been learned so far from post-blowout time series studies? How do hydrocarbon fluxes and transformations from the blowout compare with natural oil and gas seep releases? What records do sediment cores hold in terms of baseline environmental conditions that existed prior to oil drilling and quantitative spatial and temporal changes resulting from the blowout and the eventual recovery? This session will address several of the conference themes, including understanding dynamic chemical and physical processes in the Gulf of Mexico, understanding the chemistry and evolution and interactions of pollutants introduced by humans in open-ocean and deep-water ecosystems.

**Session Organizer*

Time	Title	Presenter
1:30p-1:45p	Session Introduction	
1:45p-2:00p	A Comprehensive Time-Series of Surface Oil During DWH	Ian MacDonald, Florida State University
2:00p-2:15p	Radiocarbon Tracing of the Flux of Petrocarbon to the Sea Floor and Coastal Foodweb Associated with the Deep Water Horizon Event	Jeff Chanton, Florida State University
2:15p-2:30p	Transformation of oil in sediments constrained using advanced 14C analysis	Brad Rosenheim, University of South Florida
2:30p-2:45p	Variability and Quantification of Oil and Gas Bubble Release from Natural Seeps in the Gulf of Mexico	Caroline Johansen, Florida State University
2:45p-3:00p	Tracing Methane Friction Layer Maxima and Plumes from Natural Hydrocarbon Seeps in Deep Waters of the Northern Gulf of Mexico	Christopher Martens, University of North Carolina at Chapel Hill
3:00p-3:30p	Coffee Break	
3:30p-3:45p	Assessing Hydrocarbon Flow Through Sediments Using Radium Isotopes	Leigha Peterson, Coastal Carolina University
3:45p-4:00p	Surface Sediments Became More Reducing Following The BP Deepwater Horizon Blowout Event	David Hastings, Eckerd College
4:00p-4:15p	Impacts of Cold Seeps on Nutrient Distributions in the Northern Gulf of Mexico	Kristen Jolley, Georgia Institute of Technology
4:15p-4:30p	Spatial and Temporal Distribution of Water Column Polycyclic Aromatic and other Petroleum Hydrocarbons from the Deepwater Horizon (DWH) Incident	Terry Wade, Texas A&M University
4:30p-4:45p	Four years after the BP Spill: Distinctive oxidation trends of oil residue in Louisiana salt marsh sediments revealed by FT-ICR mass spectrometry	Huan Chen, National High Magnetic Field Laboratory
4:45p-5:00p	Time series PAH concentrations in shoreline mollusks and continental shelf sediments of the Florida Panhandle	Richard Snyder, University of West Florida

Session 013

DISPERSANTS AND THEIR COMPONENTS: ENVIRONMENTAL FATE AND EFFECTS ON ORGANISMS AND BIOGEOCHEMICAL PROCESSES

Wednesday, February 18, 1:30p – 5:00p, Plaza II

Anne McElroy, Stony Brook University*
Lee Ferguson, Duke University
Bruce Brownawell, Stony Brook University
Olanike Adeyemo, University of Florida**
Matt Perkins, Oregon State University**

Environmental trade-offs related to the use of dispersants to mitigate some of the effects of oil spills, and past and future dispersant use remains a subject of controversy. This session will bring together researchers from different disciplines who have been making progress on understanding the composition and environmental distributions of complex mixtures of dispersant components; biogeochemical processes that can fractionate or transform chemicals in dispersant formulations; effects that dispersants can have on the fate of nonaqueous oil phases and dissolved petroleum hydrocarbons, including interactions with suspended particles or bed sediments; and effects of dispersants and specific ingredients alone or in chemically dispersed oil have on biota and ecosystem health and function. To better synthesize what has been learned about the likely or potential impacts and fate of dispersant mixtures, and as a guide to identify knowledge gaps, it will be important to consider how concentration and composition influence mechanisms of response and environmental fate.

**Session Organizer*

***Invited Speaker*

Time	Title	Presenter
1:30p-1:45p	Session Introduction	
1:45p-2:00p	Assessing risks of crude oil-dispersant mixture on reproduction - a *Caenorhabditis elegans* model for mechanism of response	Xiaoping Pan, East Carolina University
2:00p-2:15p	Sub-Lethal Effects of Corexit® 9500 and Oil on the Eastern Oyster (*Crassostrea virginica*) following Acute Exposure	Lindsay Jasperse, University of Connecticut
2:15p-2:30p	Ecotoxicological Effects of Oil Spill Dispersants on Sensitive Estuarine Species	Peter Key, National Oceanic and Atmospheric Administration
2:30p-2:45p	The impacts of Macondo-252 crude and Corexit-9500 on embryonic development in the Gulf killifish, *Fundulus grandis*, subjected to varying salinities	Charles Brown, Louisiana State University
2:45p-3:00p	Effects of weathered oil and dispersants on hatchling morphology, apical and molecular endpoints of *Menidia beryllina* embryo	Olanike Adeyemo, Center for Human and Environmental Toxicology, University of Florida
3:00p-3:30p	Coffee Break	
3:30p-3:45p	Bioavailability of oil in different laboratory aquatic exposure systems: passive, physical, and chemical dispersion/dosing methods	Aaron Redman, ExxonMobil Biomedical Science, Inc
3:45p-4:00p	Long term persistence of DOSS in Gulf of Mexico sediments	Matt Perkins, Oregon State University
4:00p-4:15p	Characterization of transformation kinetics and products of Corexit® 9500 in seawater using high resolution mass spectrometry	Sarah Choyke, Duke University
4:15p-4:30p	Intercomparison of LC-MS-based Approaches for Determining the Chemical Composition of Dispersant Formulations	Bruce Brownawell, Stony Brook University
4:30p-5:00p	Panel Discussion	

Session 014

IMPACTS FROM THE DEEPWATER HORIZON SPILL ON DEEP-SEA ECOSYSTEMS: DETECTION, CAUSES, AND EFFECTS ON THE BENTHOS

Wednesday, February 18, 1:30p – 5:00p, Galleria IV

Amy Baco-Taylor, Florida State University*
Paul Montagna, Texas A&M University-Corpus Christi
Amanda Demopoulos, U.S. Geological Survey
Charles Fisher, Penn State University
Helen White, Haverford College
Carl Kaiser, Woods Hole Oceanographic Institution
Paul Montagna, Texas A&M University-Corpus Christi**

The Deepwater Horizon (DWH) oil spill provides a first opportunity to understand the effects of an oil spill on deep-sea fauna. Deep-sea benthic fauna (including microbes, meiofauna, macrofauna and megafauna) are diverse, ubiquitous and interlinked, and perform important ecosystem services including bioturbation and carbon cycling, as well as being components of the food web for demersal fisheries species. In addition, many benthic taxa are highly sensitive to perturbations and thus represent good indicators of the spatial and temporal extent of the spill impact on the deep-sea floor. Oil, gas and dispersants originating from the DWH spill were transported to deep-sea ecosystems through neutrally buoyant deep-water plumes and via marine snow containing oil from surface slicks that subsequently sank. The persistence of the DWH oil and associated dispersants as well as the spatial extent and severity of the impacts of the spill, have been influenced by chemical, physical and microbial processes. Impacts to both hard-ground and soft sediment ecosystems in the deep Gulf of Mexico have been documented and studies are ongoing. In addition, the persistence of the DWH oil and dispersants as well as the response of microbes and other fauna to these compounds, are the subject of intense study. In this session, we invite papers that investigate the full range of effects of the spill on deep-sea ecosystems, from microbes to megafauna, from organisms to ecosystems and from acute to chronic as well as papers describing new methods developed to survey, recognize and study anthropogenic impacts to deep-sea ecosystems.

**Session Organizer*

***Invited Speaker*

Time	Title	Presenter
1:30p-1:45p	Session Introduction	
1:45p-2:00p	Persistent Impacts to the Deep Soft-Bottom Benthos one year after the Deepwater Horizon Event	Paul Montagna, Texas A&M University-Corpus Christi
2:00p-2:15p	Mediating effect of phytoplankton-related marine snow in oil fate and deep sea benthic ecotoxicity	Edwin Foekema, Institute for Marine Resources and Ecosystem Studies Wageningen UR
2:15p-2:30p	Rapid sedimentation, resuspension and redistribution of hydrocarbons in the wake of the Macondo Blowout	Samantha Joye, University of Georgia
2:30p-2:45p	Effects of high pressure on hydrocarbon-degrading bacteria	Martina Schedler, Hamburg University of Technology
2:45p-3:00p	Analysis of Oil Spill Impacts on Shipwrecks: Implications for Archaeology, Microbial Ecology, and Ecosystem Monitoring	Leila Hamdan, George Mason University
3:00p-3:30p	Coffee Break	
3:30p-3:45p	Sedimentary Evidence of Abrupt Environmental Changes After The Catastrophic Ixtoc Oil Spill and/or Chichonal Volcanic Events in the Southern Gulf of Mexico	Maria Machain-Castillo, Universidad Nacional Autónoma de México
3:45p-4:00p	Quantifying the ecological and chemical impacts of the Deepwater Horizon event on benthic foraminifera and rates of subsequent recovery (2010-2014)	Patrick Schwing, University of South Florida
4:00p-4:15p	Initial Findings of Macrofauna Community Structure within the DeSoto Canyon	Arvind Shantharam, Florida State University
4:15p-4:30p	Deepwater Horizon (DWH) Oil Spill: Assessment Of Potential Impacts To The Offshore Benthos And Sediment Quality Along The Gulf Of Mexico Shelf	Jeff Hyland, National Oceanic and Atmospheric Administration
4:30p-5:00p	Natural vs. anthropogenic oil: an ecological comparison	Travis Washburn, Texas A&M University - Corpus Christi
4:45p-5:00p	Post-spill response of cold-water coral associated benthos in the Gulf of Mexico after the Deepwater Horizon oil spill	Amanda Demopoulos, U.S. Geological Survey

Session 015

COASTAL ECOSYSTEMS FOUR YEARS AFTER THE DWH OIL SPILL: WHAT'S CHANGED?

Wednesday, February 18, 1:30p – 5:00p, Galleria I

R. Eugene Turner, Louisiana State University*
Nancy Rabalais, Louisiana Universities Marine Consortium
Brian Roberts, Louisiana Universities Marine Consortium
Scott Zengel, Atkins Incorporated**

This session invites contributions on how coastal ecosystems have been affected, or not, following 4+ years of oil exposure following the Deepwater Horizon spill. We invite talks on the responses for a wide range of topics including oil distributions and degradation in the marshes and nearshore sediments, trajectories of oil transport, marsh erosion and stability, marsh vegetation, food web studies, and specific community responses (e.g., insects, infauna, birds, fish, etc.), commercial fisheries and ecological and biogeochemical process rates.

The session will engage three main questions:

1. What are the impacts that are significant, long-lasting and incompletely revealed?
2. What would we do differently as scientists - or urge others to do differently -- to optimize the preparation for and response to future spills?
3. How does what we have learned influence how management might or should respond to future oil spills and their prevention?

**Session Organizer*

***Invited Speaker*

Time	Title	Presenter
1:30p-1:45p	Session Introduction	
1:45p-2:00p	Oil Source Fingerprinting in Heavily Weathered Residues and Coastal Marsh Samples	Edward Overton, Louisiana State University
2:00p-2:15p	Impacts of River Diversions on Surface Oil Transport in Deltaic Gulf of Mexico Estuaries	Dubravko Justic, Louisiana State University
2:15p-2:30p	A temporal study of an Alabama salt marsh microbial community impacted by the Deepwater Horizon oil spill	Suja Rajan, University of Alabama
2:30p-2:45p	Potential impacts of oiling on nitrifying communities in Louisiana salt marshes	Anne Bernhard, Connecticut College
2:45p-3:00p	Ecosystem responses to changing microbial community compositions as a function of natural and anthropogenic stressors in Louisiana coastal marshes	Annette Engel, University of Tennessee-Knoxville
3:00p-3:30p	Coffee Break	
3:30p-3:45p	Sustained impacts on Louisiana salt marsh soil greenhouse gas fluxes following the Deepwater Horizon oil spill	Brian Roberts, Louisiana Universities Marine Consortium
3:45p-4:00p	Denitrification rates in marsh sediments exposed to oil from the Deep Water Horizon spill and nearby reference sites in Louisiana salt marshes	Anne Giblin, Marine Biological Laboratory
4:00p-4:15p	Rate and trajectory of erosion along the Louisiana coast after the Deepwater Horizon oil spill	Giovanna McClenachan, Louisiana State University
4:15p-4:30p	Landsat detection of the effect of the Macondo oil spill on the southeastern Louisiana coastal marshes	J. Riter, University of Maryland
4:30p-5:00p	Heavily oiled salt marsh and the Deepwater Horizon spill: shoreline cleanup, emergency restoration, and ecological recovery (2013-2014)	Scott Zengel, Research Planning Inc.
4:45p-5:00p	Effects of Oil-Contaminated Sediments on Wigeongrass (*Ruppia maritima*)	Charles Martin, Louisiana State University

Session 016

DYNAMIC PHYSICAL PROCESSES IN THE GULF OF MEXICO: WHAT HAVE WE LEARNED, WHAT DOES IT MEAN AND HOW CAN IT BE USED?

Wednesday, February 18, 1:30p – 5:00p, Galleria III

Clint Dawson, University of Texas at Austin*
Eric Chassignet, Florida State University
Tamay Özgökmen, University of Miami
Tim Nedwed, ExxonMobil Upstream Research Company**

This session will focus on dynamic physical processes in the Gulf of Mexico, what has been learned about these processes through recently funded research, and, in turn, how this research has improved understanding of transport (e.g. chemical and biological) across vastly different scales. Presentation topics will include in-situ observations and experiments on physical processes occurring at various scales, laboratory studies, geophysical modeling and the development of numerical simulation tools. This session will provide a forum for dialog on research implications, applications and synthesis, with participation from university, government and industry researchers.

**Session Organizer*

***Invited Speaker*

Time	Title	Presenter
1:30p-1:45p	Session Introduction	
1:45p-2:15p	Overview of the American Petroleum Institute (API) Joint Industry Task Force Subsea Dispersant Injection Project	Tim Nedwed, ExxonMobil
2:15p-2:30p	Circulation Patterns from the Surfzone Coastal Oil Pathways Experiment	Mathias Roth, Naval Postgraduate School
2:30p-2:45p	Hurricane Isaac, Hercules Fire, and Winter Storms: The Gulf of Mexico has it all!	Shuyi Chen, University of Miami
2:45p-3:00p	The nature of surface ocean transport in realistic simulations of the Gulf of Mexico	Maria Olascoaga, Rosenstiel School of Marine & Atmospheric Science
3:00p-3:30p	Coffee Break	
3:30p-3:45p	Numerical circulation model skill assessment from two-year observations from a moored deepwater current meter array near the Macondo spill site	Steven DiMarco, Texas A&M University
3:45p-4:00p	Coastal circulation during SCOPE from satellite remote sensing	John Hargrove, CSTARS, University of Miami
4:00p-4:15p	Near-bottom response to tropical cyclones in regions with steep bathymetry	Steven Morey, Florida State University
4:15p-4:30p	Characterization of the Uncertainty of Loop Current Metrics using a Multidecadal Numerical Simulation and Altimeter Observations	Eric Chassignet, Florida State University
4:30p-4:45p	Lagrangian and Eulerian Observations of the Transport Induced by Wind, Waves and Tides Near the Sea Surface	Guillaume Novelli, University of Miami
4:45p-5:00p	The effect of wind, baroclinic instabilities, and shelf circulation on the cross-shore transport of surface materials	Robert Hetland, Texas A&M University

WEDNESDAY POSTER SESSIONS

Wednesday, February 18
5:30pm-8:00pm
Woodway Hall

#	Title	Presenter
Session 010		
121	Using Ramped Pyrolysis-Gas Chromatography-Mass Spectrometry to evaluate weathering intensity of the oil in Louisiana salt marshes following the Deepwater Horizon oil spill	Meredith Evans, Marine Science Institute, The University of Texas Austin
122	Factors Controlling Biodegradation Of Buried MC252 Oil On A Coastal Headland Beach	LeeAnn Fitch, Louisiana State University
123	Effect of solar radiation on transformation of polycyclic aromatic hydrocarbons trapped in oil spill residues	Gerald Francis John, Auburn University
124	Characterization of Submerged Oil Mat Samples From Coastal Louisiana	John Pardue, Louisiana State University
125	Novel NIR/SWIR Sensor System for the Early Detection and Monitoring of Offshore Oil Spills	Greggy Santos, University of Houston
126	Using Cyclodextrins for Pollutant Extraction and Array-Based Detection via Ternary Complex Formation in Complex Environments	Nicole Serio, University of Rhode Island
127	Examining Weathered Oil In Surface Residual Oil Balls From 202014	Chloe Wang, Haverford College
Session 011		
128	Lessons Learned Adapting NETL's Gulf of Mexico Integrated Assessment Model for other U.S. Regions	Jennifer Bauer, National Energy Technology Laboratory
129	Remote Sensing Systems for Oil Spill Detection and Analysis - A State of the Art Assessment	Derek Burrage, Naval Research Lab
130	Commercial satellite radar observations of the Deepwater Horizon oil spill	Michael Caruso, University of Miami
132	Mechanically strong aerogel fabrics for oil capture and recovery	Osman Karatum, Duke University
133	Future autonomous underwater vehicle adaptive sampling on the Mississippi-Alabama shelf	Travis Miles, Center for Ocean Observing Leadership
134	Assessing the vulnerability and implications of modeled oil spills in the Gulf of Mexico	Jake Nelson, National Energy Technology Laboratory
135	Using Oil Core Qualities for Predicting Dispersion of Spilled Surface Oil	Marieke Zeinstra-Helfrich, NHL University of Applied Sciences
136	Detection of Oil Thickness Signatures in Synthetic Aperture Radar (SAR) and Hyperspectral Satellite Imagery	Oscar Garcia Pineda, Water Mapping
Session 012		
137	Transience and Persistence of Natural Hydrocarbon Seepage in Mississippi Canyon, Gulf of Mexico	Oscar Garcia Pineda, Water Mapping
138	Distribution and Accumulation of Polycyclic Aromatic Hydrocarbons in the northern Gulf of Mexico Sediments	Puspa Adhikari, Louisiana State University
139	Changes in sedimentary barium following the BP DWH Blowout event	Thea Bartlett, Eckerd College

#	Title	Presenter
140	Longitudinal Studies of Gulf of Alaska Samples by GCxGC and Chemometric Analysis	Alex Kloo & Nickolette Morin, U.S. Coast Guard Academy
141	Projection Of The Deepwater Horizon Spill In The Gulf Of Mexico Water Column Using Biogeochemical Tracers	Joanna Kolasinski, University of South Florida
142	Temporal Variability in Total Oxygen Utilization by Hydrocarbon-Rich Sediments at Lease Block MC118, Northern Gulf of Mexico	Christopher Martens, University of North Carolina at Chapel Hill
143	Sedimentary record of PAHs in offshore areas of the Northern Gulf of Mexico after the Deepwater Horizon oil spill	Quentin Miller, University of South Florida
144	Spatial and Temporal Comparison of Pre- and Post- Deepwater Horizon Spill Hydrocarbon Records in Sediments from the Gulf of Mexico	Jagoš Radović, University of Calgary
145	Utilizing the sedimentary record of planktonic foraminiferal accumulation rates to validate surficial marine oil snow flux following the Deepwater Horizon event	Haley Ramirez, Eckerd College
146	Chemometric characterization of deep water sediments in the Southern Gulf of Mexico	Ana Ruiz Fernandez, Instituto de Ciencias del Mar y Limnología, Universidad Nacional Autónoma de México
147	Recent sedimentation in the Southern Gulf of Mexico	Joan Sanchez-Cabeza, Universidad Nacional Autónoma de México
148	Constraining the spatial extent of the Marine Oil Snow Sedimentation and Accumulation (MOSSFA) following the DWH event using a 210Pb inventory approach	Patrick Schwing, University of South Florida
149	Changes Between 2008-2011 in Seasonal Average Trace Metal Concentrations in Bottom Sediment Retrieved from the Eastern Outer Continental Shelf (OCS), Gulf of Mexico	David Steffy, Jacksonville State University
150	Temporal Trends of Florescence Estimated Oil Equivalents in the Water Column during and four year after the Deepwater Horizon Spill	Terry Wade, Texas A&M University
151	Inorganic carbon and pH in the Gulf of Mexico: Understanding the Deepwater Horizon Region	Jordan Young, Texas A&M University
Session 013		
1	The Use of Ephyrae of a Scyphozoan Jellyfish, *Aurelia aurita*, in the Ecotoxicological Assessment of MC252 Oil	Brandi Echols, University of Maryland Baltimore County
2	Toxicity of Water Accommodated Fractions of Oil and Oil-Dispersant Mixtures to Early-Life Stages of the Blue Crab, *Callinectes sapidus*	Brandi Echols, University of Maryland Baltimore County
3	Sorption of DOSS to Coastal Gulf of Mexico Sediments	Benedette Adewale, Stony Brook University
4	A Quantitative Assessment of the Impact of Surfactant Stabilized Interfaces on the Growth of *Alcanivorax borkumensis*	Michelle Bookstaver, Brown University
5	Evaluation of the cactus based-mucilage dispersant on its toxicity and surface tension and droplet size of dispersed crude oil	Fei Guo, University of South Florida
6	Combined Effects of Hypoxia and Dispersed Oil on Sheepshead Minnow Larvae	Irvin Huang, Stony Brook University

#	Title	Presenter
7	Toxic effects of crude oil, dispersant and oil-dispersant on the marine microalgae *Ostreococcus tauri* assessed by a luminescent biosensor approach	Fabien Joux, Laboratoire d'Océanographie Microbienne, Observatoire Océanologique
8	Polymer Grafted Nanoparticle-based Oil Dispersants	Daehak Kim, University of Houston
9	Effects of Corexit® 9500 as a Potential Endocrine Disruptor on Sex Determination of the American Alligator	Nicole McNabb, College of Charleston
10	Biodegradation of total bioavailable and speciated hydrocarbons from dispersed oil in seawater	Tom Parkerton, ExxonMobil Biomedical Sciences, Inc.
11	Quantifying hydrocarbon toxicity to shallow-water corals: Improving NEBA for dispersant decision-making	D. Abigail Renegar, Nova Southeastern University Oceanographic Center
12	Development Of A Fish Liver Microtissue Model To Characterize The Toxicity Of PAHs And Particle-Based Dispersants	April Rodd, Brown University
13	Monitoring of DOSS Hydrolysis Metabolites in Seafood Collected from the Gulf of Mexico	Darrell Sparks, Mississippi State Chemical Laboratory
14	Predicting Long Term Impacts of Oil/dispersant Exposures on Human Health and Higher Trophic Organisms: Obesogenicity	Alexis Temkin, Medical University of South Carolina
Session 014		
153	Comparative records of persistent δ13C depletion in benthic foraminiferal carbonate following the Deepwater Horizon and Ixtoc events	Miaya Glabach, University of South Florida
154	Benthic Foraminifera Density and Richness Patterns In The Southern Gulf of Mexico 25 Years After The Ixtoc Oil Spill	Maria Machain-Castillo, Universidad Nacional Autónoma de México
155	Effects of the Deepwater Horizon Oil Spill on Alabama coastal fish populations: observations from a recreational fishing tournament	Clara Robison, University of North Florida
156	Monitoring Recovery of Mesophotic Corals: 2011-2014	Mauricio Silva, Florida State University
157	Changes to the metabolome of the deep-sea coral Leiopathes glaberrima as a result of exposure to crude oil and the chemical dispersant, Corexit 9500	Sam Vohsen, Pennsylvania State University
158	Using DNA adducts to examine polycyclic aromatic hydrocarbon exposure in shark and bony fish populations impacted by the Deepwater Horizon oil spill	John Whalen, University of North Florida
159	Stained Benthic Foraminifera Patterns from Deep Sea Sediments in the Gulf of México	Aidee Egremy, El Centro de Investigación Científica y de Educación Superior de Ensenada
160	Trophic Structure, Feeding Ecology and Bioaccumulation Of Hg In GoM Hagfishes	Alejandra Mickle, Florida State University
Session 015		
16	Variation in Spartina alterniflora physiology in south Louisiana saltmarshes	Rachael Blake, Louisiana State University
17	Recovery after the Deepwater Horizon Oil Spill: Shoreline Oiling Effects on Marsh Erosion	Stefan Bourgoin, Atkins, Inc.
18	Trials and tribulations of Gulf of Mexico algae and macrocrustaceans inhabiting deep banks offshore Louisiana: what have we learned since the 2010 Deepwater Horizon oil spill?	Olga Camacho, University of Louisiana at Lafayette
19	Distribution Of Petrogenic Polycyclic Aromatic Hydrocarbons (PAHs) In Shrimps After The Deep Water Horizon Oil Spill	Harshica Fernando, University of Texas Medical Branch at Galveston
20	Recovery of Structure, Function, and Sustainability of Coastal Salt Marshes Impacted by the Deepwater Horizon Oil Spill in northern Barataria Bay	Qianxin Lin, Louisiana State University
21	Estimating oil exposure of red snapper and gag grouper during the DWH blowout	David Lindo-Atichati, University of Miami

#	Title	Presenter
22	High Site Fidelity of the Gulf Killifish (*Fundulus grandis*) in Northern Gulf of Mexico Marshes: An Empirical and Modeling Approach to Help Address Oil Effects	Charles Martin, Louisiana State University
23	Uptake and deposition of pyrogenic and petrogenic PAHs on Spartina leaves and transfer to marsh periwinkle snails (*Littoraria irrorata*)	Yasmin Mohammed, Louisiana State University
24	The weathering and distribution of petroleum hydrocarbons along coastal Louisiana following the Deepwater Horizon oil spill	Edward Overton, Louisiana State University
25	Deepwater Horizon oil spill and Gulf of Mexico shelf hypoxia	Nancy Rabalais, Louisiana Universities Marine Consortium
26	Spatial patterns in soil biogeochemical process rates along a Louisiana wetland salinity gradient in the Barataria Bay estuarine system	Brian Roberts, Louisiana Universities Marine Consortium
27	The Effects of the DWH Oil Spill on the Distribution of Crab Megalopae, Mussels, and Snails within Terrebonne Bay, LA Four Years after the Spill	Elizabeth Robinson, Louisiana State University
28	New insights in the exploration of cryptic microbiota associated with pre- and post-DWH oil spill rhodoliths using Next-Generation and Sanger Sequencing: a case for the NW Gulf of Mexico	Thomas Sauvage, University of Louisiana at Lafayette
29	Comparing fishing pressure and oil spill impacts for northern Gulf of Mexico near-coastal fish assemblages	Jacob Schaefer, University of Southern Mississippi
30	Quantitative declines in Mesophotic reef fish abundance and shifts in community structure across the threshold of the Deepwater Horizon event; temporal and spatial contrasts	Kenneth Sulak, U.S. Geological Survey
31	Evidence of cross-shelf inorganic carbon export in the northern Gulf of Mexico	Hongjie Wang, Texas A&M-Corpus Christi
32	A modern view of diversity and research needs among Seaside Sparrow populations along the Gulf of Mexico	Stefan Woltmann, Austin Peay State University
Session 016		
201	Quantification of Stokes Drift as a Mechanism for Surface Oil Advection in the DWH Oil Spill	Matthew Clark, Florida State University
202	The coupled estuarine-shelf response of a river-dominated system during the transition from low to high discharge	Brian Dzwonkowski, University of South Alabama
203	Observed surface current patterns influenced by bathymetry and wind forcing along the shelf of the northeastern Gulf of Mexico	Matt Gough, Rosenstiel School of Marine and Atmospheric Science, University of Miami
204	Parametrization of surface particle transport at submesoscales in the Gulf of Mexico	Angelique Haza, Rosenstiel School of Marine and Atmospheric Science, University of Miami
205	The SailBuoy remotely-controlled unmanned vessel: measurements of near surface temperature, salinity and oxygen concentration in the Northern Gulf of Mexico	Lars Robert Hole, Norwegian Meteorological Institute
206	One- and two-dimensional dispersion quantification from drifter triads	Helga Huntley, University of Delaware
207	A Mechanism for Generating Submesoscale Internal Wave Fronts Through Interactions with Near-Inertial Waves	Zhao Jing, Texas A&M University
208	Sensitivity of Deep Tracer Release Simulation to Model Resolutions, Advection Schemes and Physics Parameterizations	Jaison Kurian, Department of Oceanography, Texas A&M University
209	Experimental Identification of Multiple States with Hysteresis in Loop Current Systems	Joseph Kuehl, Baylor University
210	GoMRI Mooring Comparison	Joseph Kuehl, Baylor University
211	Glider Salinity Correction for Unpumped Conductivity and Temperature Sensors Across A Sharp Thermocline	Yonggang Liu, University of South Florida

#	Title	Presenter
212	Near-Inertial Variability in the Northern Gulf of Mexico	Ekaterina Maksimova, University of South Florida
213	Variability of cross-slope near-bottom flow in the De Soto Canyon region	Steven Morey, Florida State University
214	Beach and shore-face changes along the Galveston Barrier Island after Hurricane Ike: Geomorphologic features and their potential for oil spill monitoring	Juan Moya, Freese and Nichols, Inc.
215	Hydrostatic Modeling of Buoyant Plumes	Ashley Stroman, Florida State University
216	Texas and Louisiana coastline sensitivity and oil dispersion	Kristen Thyng, Texas A&M University
217	Age and residence time of terrestrial source water in the Western Atlantic Ocean and Gulf of Mexico	Austin Todd, North Carolina State University
218	Convective plumes in rotating systems	Bruno Deremble, Florida State University
219	Upwelling Events in the De Soto Canyon	Nicolas Wienders, Florida State University
220	Sea Surface Salinity Variations in the Northern Gulf of Mexico	Nicolas Wienders, Florida State University
221	Long term modelled dispersion of deep neutrally buoyant material in the Gulf	David Dietrich, San Diego State University
Session 017		
222	Predicting The State And Properties Of Deepwater Horizon Oil Under Pressure Using The Peng-Robinson Equation Of State	Jonas Gros, École Polytechnique Fédérale de Lausanne
223	Partitioning Behavior of Low Molecular Weight Water Xenobiotic Components throughout the Water Column from wellhead to surface	Aprami Jaggi, University of Calgary
Session 018		
66	Surfactant-Mineral-Oil Interactions with Applications in Oil-Spill Dispersion and Clean-up	Paschalis Alexandridis, University at Buffalo - The State University of New York
67	Simulations-based Design of a Biocompatible Oil Dispersant Additive	Steven Benner, North Carolina State University
68	Small Angle X-ray Scattering Studies of Crude Oil in Water with Dispersant	Lisa Bovenkamp, Louisiana State University
69	Molecular dynamics simulations of hydrophobins encapsulating oil and gas	Yuwu Chen, Louisiana State University
70	Oil Drop Interactions with Surfaces Varying in Energy and Topography	Joseph Cremaldi, Tulane University
71	The Synthesis of Amphiphilic Polymers Grafted onto Silica Nanoparticles and the Exploration of their Behavior as “Unimolecular Micelle” Dispersants	Muhammad Ejaz, Tulane University
72	Influence of particle roughness and interfacial shape on capillary forces and droplet stabilization	Wei He, University of Massachusetts Amherst
73	An Integrative Approach to Oil Spill Gelation and Removal using a Hydrophobically Modified Biopolymer in conjunction with Magnetically Responsive Carbons	Vijay John, Tulane University
74	Multi-functional cyclodextrin-based systems for the environmental remediation of oil spills	Mindy Levine, University of Rhode Island
75	Soybean Lecithin as a Dispersant for Crude Oil Spill Applications	Emmanuel Nyankson, Auburn University
76	Halloysite Clay Nanotubes as Interfacially-active Vehicles for Surfactant Delivery in Oil Spill Remediation	Olasehinde Owoseni, Tulane University
77	Characterization methods for oil dispersants	Brooke Peaden, Tulane University
78	Simulation and Molecular Resolution of Interfacial Characteristics of Water-Squalane-Dispersant Contacts	Lawrence Pratt, Tulane University
79	Stability and interfacial adsorption of hydrophobin air bubbles and oil blobs	Xujun Zhang, Georgia Institute of Technology
80	Synthesis of stearoyl lactylate coated iron oxide nanoparticles with self-assembled bilayers for use in the formation of solid-stabilized emulsions	Pranav Vengsarkar, Auburn University

#	Title	Presenter
Session 019		
224	Temporal variations in the vertical distribution of deep-water scattering layers in the Gulf of Mexico	Kevin Boswell, Florida International University
225	Impact of Ocean Velocity Observations Inferred from Lagrangian Drifter Data using the NCOM-4DVAR	Matthew Carrier, Naval Research Laboratory
226	The Impact of Including Drifter Velocity Observations in the Navy's Assimilation and Forecasting System	Scott Smith, Naval Research Laboratory

C-IMAGE graduate student Kait Frasier listens to Gulf marine mammals in order to estimate how many there are and find out if their numbers are changing after the Deepwater Horizon oil spill. (Photo Credit: C-IMAGE, S. Murawski, USF)

THURSDAY FEBRUARY 19

8:00am-12:00pm	Registration & Check-in Open	Galleria Foyer
8:00am-3:30pm	Exhibits Open	Galleria Foyer
8:00am-12:00pm	Poster Hall Open	Woodway Hall

Scientific Program Schedule

Starting at 7:30am	BREAKFAST	Galleria Foyer
8:30am-12:00pm	Session 014	Galleria IV
	Session 015	Galleria I
	Session 016	Galleria III
	Session 017	Plaza I
	Session 018	Plaza II
	Session 019	Galleria II
10:00am-10:30am	BREAK	Galleria Foyer
12:00pm-1:30pm	LUNCH	

Plenary Program Schedule

1:30pm-3:30pm	Presentation of Student Awards *Sherri Goodman, Consortium for Ocean Leadership* Session Summaries and Discussion *Moderated by Dr. Margaret Leinen, Scripps Institution of Oceanography* Conference Wrap-Up	Galleria Ballroom

Associated Meetings & Events

10:00am-10:30am	GRIIDC Session 3	West Alabama

Session 014 (Continued from Wednesday)

IMPACTS FROM THE DEEPWATER HORIZON SPILL ON DEEP-SEA ECOSYSTEMS: DETECTION, CAUSES, AND EFFECTS ON THE BENTHOS

Thursday, February 19, 8:30a – 12:00p, Galleria IV

Charles Fisher, Pennsylvania State University*
Helen White, Haverford College
Carl Kaiser, Woods Hole Oceanographic Institution
Amy Baco-Taylor, Florida State University
Paul Montagna, Texas A&M University Corpus Christi
Amanda Demopoulos, U.S. Geological Survey

The Deepwater Horizon (DWH) oil spill provides a first opportunity to understand the effects of an oil spill on deep-sea fauna. Deep-sea benthic fauna (including microbes, meiofauna, macrofauna and megafauna) are diverse, ubiquitous and interlinked, and perform important ecosystem services including bioturbation and carbon cycling, as well as being components of the food web for demersal fisheries species. In addition, many benthic taxa are highly sensitive to perturbations and thus represent good indicators of the spatial and temporal extent of the spill impact on the deep-sea floor. Oil, gas and dispersants originating from the DWH spill were transported to deep-sea ecosystems through neutrally buoyant deep-water plumes and via marine snow containing oil from surface slicks that subsequently sank. The persistence of the DWH oil and associated dispersants as well as the spatial extent and severity of the impacts of the spill, have been influenced by chemical, physical and microbial processes. Impacts to both hard-ground and soft sediment ecosystems in the deep Gulf of Mexico have been documented and studies are ongoing. In addition, the persistence of the DWH oil and dispersants as well as the response of microbes and other fauna to these compounds, are the subject of intense study. In this session, we invite papers that investigate the full range of effects of the spill on deep-sea ecosystems, from microbes to megafauna, from organisms to ecosystems and from acute to chronic as well as papers describing new methods developed to survey, recognize and study anthropogenic impacts to deep-sea ecosystems.

**Session Organizer*

***Invited Speaker*

Time	Title	Presenter
8:30a-8:45a	Mechanisms of impact from the Deepwater Horizon oil spill to corals and associated communities in the deep Gulf of Mexico	Charles Fisher, Pennsylvania State University
8:45a-9:00a	Oxygenation In Deep-water Coral Communities Of The Northern Gulf Of Mexico	Caleb King, University of North Carolina at Chapel Hill
9:00a-9:15a	Persistent effects of ocean acidification and their potential synergetic effects with other anthropogenic disturbances	Erik Cordes, Temple University
9:15a-9:30a	Response and resilience of cold-water corals to anthropogenic disturbance	Danielle Young-DeLeo, Temple University
9:30a-9:45a	Long-term effect of the Deepwater Horizon oil spill on corals and associated ophiuroids in the deep Gulf of Mexico	Fanny Girard, Pennsylvania State University
9:45a-10:00a	Potential Connectivity Of Coldwater Black Coral Communities In The Northern Gulf Of Mexico	Annalisa Bracco, Georgia Institute of Technology
10:00a-10:30a	Coffee Break	
10:30a-10:45a	Three Stage Autonomous Underwater Vehicle Based Location of Deepwater Corals and Methane Seeps	Carl Kaiser, Woods Hole Oceanographic Institution
10:45a-11:00a	Coral injuries observed at Mesophotic Coral Communities following the Deepwater Horizon oil discharge	Mauricio Silva-Aguilera, Florida State University
11:00a-11:15a	Decline In Condition Of Sea Fans On Mesophotic Reefs In The Northern Gulf Of Mexico Before And After Deepwater Horizon Oil Spill	Peter Etnoyer, National Oceanic and Atmospheric Administration
11:15a-11:30a	Mercury Levels and Isotopic Composition in the Northeastern Gulf of Mexico: Geographical Variations in Hg Biogeochemistry and Bioaccumulation in Fish	Vincent Perrot, National High Magnetic Field Laboratory
11:30a-11:45a	New data for three species of hagfishes (*Myxinidae*) from the northern Gulf of Mexico	Dean Grubbs, Florida State University Coastal and Marine Lab
11:45a-12:00p	Life History Characteristics Of Two Common Deep-Water Dogfishes (*Squalus cubensis* And *S. cf. mitsukurii*) From The Northern Gulf of Mexico	Shannon Rolfe, University of Central Florida

Session 015 (Continued from Wednesday)

COASTAL ECOSYSTEMS FOUR YEARS AFTER THE DWH OIL SPILL: WHAT'S CHANGED?

Thursday, February 19, 8:30a – 12:00p, Galleria I

R. Eugene Turner, Louisiana State University*
Nancy Rabalais, Louisiana Universities Marine Consortium
Brian Roberts, Louisiana Universities Marine Consortium

This session invites contributions on how coastal ecosystems have been affected, or not, following 4+ years of oil exposure following the Deepwater Horizon spill. We invite talks on the responses for a wide range of topics including oil distributions and degradation in the marshes and nearshore sediments, trajectories of oil transport, marsh erosion and stability, marsh vegetation, food web studies, and specific community responses (e.g., insects, infauna, birds, fish, etc.), commercial fisheries and ecological and biogeochemical process rates.

The session will engage three main questions:

1. What are the impacts that are significant, long-lasting and incompletely revealed?
2. What would we do differently as scientists - or urge others to do differently -- to optimize the preparation for and response to future spills?
3. How does what we have learned influence how management might or should respond to future oil spills and their prevention?

**Session Organizer*

Time	Title	Presenter
8:30a-8:45a	Recovery of Saltmarsh Benthic Microalgae and Meiofauna after the Deepwater Horizon Oil Spill Linked to Recovery of *Spartina alterniflora*	John Fleeger, Louisiana State University
8:45a-9:00a	Examining spatial and temporal variation of coastal meiofauna communities in the northern Gulf of Mexico using high-throughput sequencing approaches	Pamela Brannock, Auburn University
9:00a-9:15a	Recovery after the Deepwater Horizon Oil Spill: Response of the Macroinvertebrate Communities to Shoreline Oiling Effects	Donald Deis, Atkins, Inc.
9:15a-9:30a	Impacts of oil pollution on the terrestrial arthropods in Louisiana Saltmarshes: 2013 & 2014 results	Wokil Bam, Louisiana State University
9:30a-9:45a	Seaside Sparrow CYP1A gene expression on oiled and unoiled salt marsh in Barataria Bay, Louisiana	Christine Bergeon Burns, Louisiana State University
9:45a-10:00a	Short and long term effects of the Deepwater Horizon oil spill on oyster recruitment and reef biodiversity in Barataria Bay	Kenneth Brown, Louisiana State University
10:00a-10:30a	Coffee Break	
10:30a-10:45a	The Influence of Oil Exposure History and Population Genetic Variation on the Sensitivity of Gulf killifish Embryos to Crude Oil	Fernando Galvez, Louisiana State University
10:45a-11:00a	Evaluating otolith microchemistry as a method to distinguish habitat-use patterns in marsh-resident fish	Paola Lopez-Duarte, Rutgers University Marine Field Station
11:00a-11:15a	Phytoplankton Responses to 2010 Deepwater Horizon Oil Spill	Kevin Tyre, Florida Gulf Coast University
11:15a-11:30a	Phytoplankton and the Macondo oil spill: a comparison of the 2010 phytoplankton assemblage to baseline conditions on the Louisiana Shelf	Michael Parsons, Florida Gulf Coast University
11:30a-11:45a	The effects of nitrogen loading and low oxygen conditions on the fate of nitrogen in coastal ecosystems	Mary Katherine Rogener, University of Georgia
11:45a-12:00p	Four years after the DWH oil spill: What has changed with the offshore seaweeds and rhodoliths in the NW Gulf of Mexico deep banks?	Suzanne Fredericq, University of Louisiana at Lafayette

Session 016 (Continued from Wednesday)

DYNAMIC PHYSICAL PROCESSES IN THE GULF OF MEXICO: WHAT HAVE WE LEARNED, WHAT DOES IT MEAN AND HOW CAN IT BE USED?

Thursday, February 19, 8:30a – 12:00p, Galleria III

Clint Dawson, University of Texas at Austin*
Eric Chassignet, Florida State University
Tamay Özgökmen, University of Miami

This session will focus on dynamic physical processes in the Gulf of Mexico, what has been learned about these processes through recently funded research, and, in turn, how this research has improved understanding of transport (e.g. chemical and biological) across vastly different scales. Presentation topics will include *in-situ* observations and experiments on physical processes occurring at various scales, laboratory studies, geophysical modeling and the development of numerical simulation tools. This session will provide a forum for dialog on research implications, applications and synthesis, with participation from university, government and industry researchers.

**Session Organizer*

Time	Title	Presenter
8:30a-8:45a	Coastal Models of Oil Transport in the Northern Gulf of Mexico	Joel Dietrich, North Carolina State University
8:45a-9:00a	Impact Of Submesoscale Processes On Mean Circulation, Transport And Mixing In The Deep Waters Of The Northern Gulf Of Mexico	Keshav Joshi, Georgia Institute of Technology
9:00a-9:15a	Improved surface transport estimates in the Gulf of Mexico by blending altimetry and drifter data	Maristella Berta, l'Istituto di Scienze Marine del Consiglio Nazionale delle Ricerche
9:15a-9:30a	Richardson pair dispersion in the surface ocean	Andrew Poje, City University of New York-College of Staten Island
9:30a-9:45a	Trapping heights in hot multiphase plumes	Alexandre Fabregat, College of Staten Island, City University of New York
9:45a-10:00a	The Structure of Eddy Diffusivity Across the Shelf and Slope in the North Eastern Gulf of Mexico	Elizabeth Simons, Florida State University Geophysical Fluid Dynamics Institute
10:00a-10:30a	Coffee Break	
10:30a-10:45a	Physical processes controlling tracer exchange at the mouth of Galveston Bay	Matthew Rayson, Stanford University
10:45a-11:00a	Atmospheric Turbulent Structure and Vertical Transport in the Hurricane Boundary Layer	Ping Zhu, Florida International University
11:00a-11:15a	The Role of Turbulence on Droplet Dynamics: Application to the Deepwater Horizon Oil Spill in the Gulf of Mexico	Zhankun Wang, Texas A&M University
11:15a-11:30a	Large-eddy simulation and K-profile parameterization of oceanic oil spill dispersion	Charles Meneveau, Johns Hopkins University
11:30a-11:45a	Seasonal variability and robustness of two-particle statistical measures in a very-high-resolution simulation of the northern Gulf of Mexico	Francisco Beron-Vera, Rosenstiel School of Marine and Atmospheric Science, University of Miami
11:45a-12:00p	Identification of bottom intensified dynamics on the northern Gulf of Mexico slope and their impact on fate and transport modeling	Joseph Kuehl, Baylor University

Session 017

HIGH-PRESSURE EXPERIMENTAL AND MODELING-BASED STUDIES FOR UNDERSTANDING DEEP BLOWOUT

Thursday, February 19, 8:30a – 12:00p, Plaza I

Claire Paris, Rosenstiel School of Marine and Atmospheric Science*
Zachary Aman, The University of Western Australia
Michael Schlüter, Hamburg University of Technology
Carolyn Koh, Center for Hydrate Research at the Colorado School of Mines**
Karen Malone, Hamburg University of Technology+
Katrin Laqua, Hamburg University of Technology+

The goals of the Session are to understand the behavior of live oil, gas and chemical dispersants in deep water environments and to quantify the fate processes of both oil and gas in the water column that enable predictive capacity of their vertical and lateral migration. These outputs can be applied to predict the severity of future marine blowouts and quantify the effectiveness of deep dispersant injection. The major underlying hypothesis is that the physical and chemical process associated with high pressure and water stratification result in deep plumes with intrusion layers identified in field data at several depth intervals and the formation of hydrates for which the effects of dispersants is unclear. Even less clear are the interactions of dispersant with oil fate processes, including biodegradation, dissolution, flocculation, sedimentation and sequestration in the deep sea.

This session focuses on experimental, multi-physics Computational Fluid Dynamics (CFD), and multi-phase hydrocarbon modeling-based studies that are necessary to predict the distribution of crude oil under high pressure and cold water conditions, and to enhance the accuracy and applicability of far-field simulators in these extreme conditions.

**Session Organizer*

***Keynote Speaker*

+Invited Speaker

Time	Title	Presenter
8:30a-8:45a	Session Introduction	
8:45a-9:15a	Gas Hydrate Formation in Deep Ocean Conditions	Carolyn Koh, Center for Hydrate Research, Colorado School of Mines
9:15a-9:30a	An integrated approach for the experimental investigation of hydrocarbon jet behavior under artificial deep-sea conditions	Karen Malone, Hamburg University of Technology
9:30a-9:45a	Oil droplet size distribution and fluorescence in subsea plume simulations: implications for response tools	Robyn Conmy, U.S. Environmental Protection Agency
9:45a-10:00a	Gas plume bubble dissolution at Gulf of Mexico natural methane seeps	John Breier, Woods Hole Oceanographic Institution
10:00a-10:30a	Coffee Break	
10:30a-10:45a	Effect of gas hydrates on the fate of rising hydrocarbon bubbles from natural seeps and accidental releases in the deep ocean	In Ok Jun, Texas A&M University
10:45a-11:00a	Experimental investigation on methane bubble rise velocities - The relevant influencing parameter under deep-sea and ambient conditions	Katrin Laqua, Hamburg University of Technology, Institute of Multiphase Flows
11:00a-11:15a	Bubble characteristics at two Gulf of Mexico natural gas seepage sites	Binbin Wang, Texas A&M University
11:15a-11:30a	Experimental investigation of droplet and bubble size distribution in single and multiphase oil/gas jets under deep-sea conditions	Michael Schlüter, Hamburg University of Technology, Institute of Multiphase Flows
11:30a-11:45a	Oil Droplet Dispersion Behaviour During Deepwater Blowout Conditions	Zachary Aman, The University of Western Australia
11:45a-12:00p	Panel Discussion	

Session 018

FRONTIERS IN DISPERSANT SCIENCE AND TECHNOLOGY: FROM MOLECULAR MECHANISMS TO DESIGN OF NOVEL DISPERSANTS AND FIELD APPLICATIONS

Thursday, February 19, 8:30a – 12:00p, Plaza II

Berrin Tansel, Florida International University*
Norma Alcantar, University of South Florida
Ronald Larson, University of Michigan
Tim Nedwed, ExxonMobil**

This session is sponsored by C-MEDS. The session will focus on the new advances in dispersant science and technology and translation from fundamental physiochemical science to the integrative analysis of dispersant fate and ecosystem impacts. A distinctive aspect of the session is the integration of scales from molecular concepts to large scale dispersant application in the open ocean environment. The session will provide a forum for disseminating cutting edge research from nanoscale analyses to large scale dispersant dynamics and long term fate of dispersants. The session will include presentations on topics such as the next generation of dispersants, novel methods of delivery, assessment of performance, toxicity and fate. A white paper will be produced to disseminate the scope of research topics presented in the session.

**Session Organizer*

***Invited Speaker*

Time	Title	Presenter
8:30a-9:00a	New Dispersant Gel Treats Marine Oil Spills more Effectively with Less Product	Tim Nedwed, ExxonMobil Upstream Research Company
9:00a-9:15a	Informing the design of new oil dispersants through studies of dispersant-oil mixtures' dynamic interfacial tension and microstructure	David Riehm, University of Minnesota
9:15a-9:30a	Multifunctional Microgel Dispersions for the Absorption and Release of Surfactant Dioctyl Sodium Sulfosuccinate (DOSS)	Haobo Chen, Arizona State University
9:30a-9:45a	Magnetite Nanoparticles Stabilized by Halloysite Clay Nanotubes for Oil Emulsification and Electromagnetic Remote Sensing	Olasehinde Owoseni, Tulane University
9:45a-10:00a	Simulations of Tween® 80 Monolayers and Micelles: Structure and Adsorption Energetics	Kyle Huston, University of Michigan
10:00a-10:30a	Coffee Break	
10:30a-10:45a	Overcoming the critical micelle concentration: Exploring nanoparticles with amphiphilic grafts as concentration-independent unimolecular micelles	Scott Grayson, Tulane University
10:45a-11:00a	Phase Behavior of Dilute Carbon Black Suspensions and Carbon Black Stabilized Emulsions	Michael Godfrin, Brown University
11:00a-11:15a	Molecular Interaction of Different Surfactants with Oil at the Air-Water Interface	Paria Avij, Louisiana State University
11:15a-11:30a	Characterization of the interfacial behavior of a model dispersant-biosurfactant system	Stephanie Kirby, Carnegie Mellon University
11:30a-11:45a	Investigating the Effects of Critical Structural Parameters on the Loading Capabilities of Amphiphilic Grafted Nanoparticles: Characterization and Design Optimization	Alina Alb, Tulane University
11:45a-12:00p	The Response of Surfactant Stabilized Oil-in Water Emulsions to the Addition of Particles in an Aqueous Suspension	Hari Katepalli, University of Rhode Island

Session 019

PREDICTING THE OCEAN ENVIRONMENT

Thursday, February 19, 8:30a – 12:00p, Galleria II

Scott Smith, Naval Research Laboratory*
Matthew Carrier, Naval Research Laboratory
Hans Ngodock, Naval Research Laboratory
Bruce Cornuelle, Scripps Institution of Oceanography**

This session will focus on predicting the ocean environment in the Gulf of Mexico using data assimilation in conjunction with numerical modeling. A vast amount of data was collected in the Gulf of Mexico during the aftermath of the Deepwater Horizon Oil Spill and much of that data was assimilated with various types of models to improve model accuracy; specifically as it relates to the prediction of mesoscale properties, currents and other ocean variables. This session seeks to demonstrate the application of these rich datasets to improve modeling and forecasting efforts in the fields of physical, biological or chemical oceanography.

**Session Organizer*

***Invited Speaker*

Time	Title	Presenter
8:30a-9:00a	Impact of Glider Data Assimilation on the Predictability of the Meso-scale circulation in the Gulf of Mexico	Bruce Cornuelle, Scripps Institution of Oceanography
9:00a-9:15a	Data assimilation considerations for improved ocean predictability during the Gulf of Mexico Grand Lagrangian Deployment (GLAD)	Gregg Jacobs, Naval Research Lab
9:15a-9:30a	An assessment of the Lagrangian predictive skill of a Navy Coastal Ocean Model ensemble in the northern Gulf of Mexico using GLAD drifters	Bruce Lipphardt, Jr., University of Delaware
9:30a-9:45a	Coupled Ocean-Air-Wave Predictions in the Gulf of Mexico	Patrick Hogan, Naval Research Laboratory
9:45a-10:00a	Evaluation of impact of DwH rapid-response surveys on numerical forecasts using Observing System Simulation Experiments	Matthieu Le Henaff, Rosenstiel School of Marine and Atmospheric Science, University of Miami
10:00a-10:30a	Coffee Break	
10:30a-10:45a	Assimilation of satellite-derived bio-optical properties into coupled bio-optical, physical model	Igor Shulman, Naval Research Laboratory
10:45a-11:00a	Statistics of Extremes in Oil Spill Risk Analysis	Zhen-Gang Ji, Bureau of Ocean Energy Management
11:00a-11:15a	The influence of grid resolution and wind specification on the prediction of transport of oil at the surface	Elizabeth North, University of Maryland Center for Environmental Science
11:15a-11:30a	Direct Sea Surface Height Data Assimilation in the Gulf of Mexico	Robert Helber, Naval Research Laboratory
11:30a-11:45a	Do assimilated drifter velocities improve Lagrangian predictability in an operational ocean model?	Philip Muscarella, Naval Research Laboratory
11:45a-12:00p	Variational data assimilation and sensitivity of surface tracers using the Navy coastal ocean in the Gulf of Mexico	Hans Ngodock, Naval Research Laboratory

2015 Closing Plenary

WHERE SHOULD WE GO NEXT?

Thursday, February 19, 1:30p – 3:30p (Galleria Ballroom)

Watkins Student Awards for Excellence in Research

Presenter
Sherri Goodman, Consortium for Ocean Leadership

Sherri Goodman

Sherri Goodman is the President and CEO of the Consortium for Ocean Leadership. She has served as Senior Vice President, General Counsel and Corporate Secretary at CNA Corporation, which operates the Center for Naval Analyses and the Institute for Public Research. She is also founder and Executive Director of CNA's Military Advisory Board. Previously, Goodman served as Deputy Under Secretary of Defense (Environmental Security) and on the staff of the Senate Armed Services Committee.

Session Summaries and Discussion

The Session Chairs will summarize key findings presented during their sessions, including the latest research findings and research implications, applications, and synthesis. Margaret Leinen, Ph.D., of the GoMRI Research Board will then moderate a discussion regarding how these findings address the conference theme, "What have we learned? What does it mean? How can it be used?" The focus will also emphasize how outcomes may influence future research efforts in the Gulf by asking "Where should we go next?"

Moderator
Margaret Leinen, Ph.D., Vice Chair, GoMRI Research Board

Margaret Leinen, Ph.D.

Dr. Margaret Leinen is the Director of Scripps Institution of Oceanography and Vice Chancellor for Marine Science of University of California at San Diego. She is also the President-Elect of the American Geophysical Union, the largest geoscience society in the world, the vice chair of the Gulf of Mexico Research Initiative Research Board and has also served as the President of The Oceanography Society and Chair of the AAAS Section on Atmospheric and Hydrospheric Science.

STUDENT AWARDS & ACTIVITIES

GOMURC
GULF OF MEXICO UNIVERSITY RESEARCH COLLABORATIVE

The Gulf of Mexico University Research Collaborative (GOMURC) generously provided Student Presenter Awards, which covered registration fees for student presenters from GOMURC member institutions. Congratulations to the student awardees and thank you for presenting your research at the 2015 Gulf of Mexico Oil Spill and Ecosystem Science Conference! Thank you to GOMURC for helping our student researchers to attend the conference!

GULF RESEARCH PROGRAM

National Academy of Sciences
National Academy of Engineering
Institute of Medicine
National Research Council

Student attendees also have the opportunity to participate in a special workshop organized by COMPASS and sponsored by the Gulf Research Program. "Communicating Your Science" helps young researchers understand their target audiences, identify, refine and reframe key messages from their research and describe the importance of their findings with minimal technical jargon. Thank you to the Gulf Research Program for providing students with this opportunity!

James D Watkins Student Award for Excellence in Research

Two students will be recognized with the James D. Watkins Student Award for Excellence in Research for outstanding student presentations. The James D. Watkins Student Award for Excellence in Research strives to recognize outstanding research in order to cultivate the next generation of ocean scientists and encourage excitement for presenting their work. Award recipients will receive $500. All students are asked to attend the closing plenary session on Thursday. Thank you to the award judges for their assistance in evaluating student presentations and to the Consortium for Ocean Leadership for sponsoring this award!

ASSOCIATED MEETINGS & EVENTS

(Note: Descriptions can be found on the conference website and the mobile app)

Monitoring status and trends of long-lived marine vertebrates as a measurable indicator of restoration and long-term health of the Gulf of Mexico ecosystem
Monday, February, 16, 9:00AM – 6:00PM
Galleria IV

COMPASS Student Half-Day Workshop: Communicating Your Science
Monday, February 16, 12:30-5:30PM
(Student Mixer to follow) Galleria I, Monarch Room (24th Floor)

Near Field Modeling Workshop
Monday, February, 16, 1:00 – 6:00PM
Imperial Suite (24th Floor)

Hydrocarbons Analysis Experiment: An Important Step in QA/QC
Monday, February, 16, 1:00 – 6:00PM
Galleria III

State-of-Science on Dispersants and Dispersed Oil
Monday, February 16, 1:00 – 2:30PM
Galleria II

Genomics and Metagenomics: Environmental Applications in Oil Spill Response and Recovery
Monday, February 16, 2:00 – 6:00PM
Regal Suite (24th Floor)

Environmental Disasters Data Management Working Group
Monday, February 16, 3:00 – 4:30PM
Galleria II

GRIIDC Session 1: Introduction to GoMRI Data Management
Tuesday, February 17, 10:15 – 10:40AM
Wednesday, February 18, 10:00 – 10:30AM
West Alabama Room

COMPASS Lunchtime Workshop: Communicating Your Science
Tuesday, February 17, 12:30 – 2:00PM
Wednesday, February 18, 12:00 – 1:30PM
($15 includes a box lunch) Royal Suite (24th Floor)

GRIIDC Session 2: GRIIDC System Walkthrough
Tuesday, February 17, 3:30 – 4:00PM
Wednesday February 18, 3:00 – 3:30PM
West Alabama Room

GRIIDC Session 3: Metadata Development & Best Practices
Wednesday February 18, 8:00 – 8:30AM
Thursday, February 19, 10:00 – 10:30AM
West Alabama Room

Gulf Science and Restoration Programs Update and Panel Discussion
Wednesday, February 18, 5:15 – 6:45PM
Galleria II

Science Partnerships Enabling Rapid Response (SPERR)
Wednesday, February 18, 7:00 – 8:00PM
Royal Suite

NOTES